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BUSINESS TECHNOLOGY LEADERSHIP

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BY BEN WORTHEN



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[END USERS]

HANDLING WITH CARE

After you've read "The Declaration of Interdependence" (Page 38) and seen how CIOs can adapt to the influx of consumer technology in the workplace, visit CIO.com to learn more about managing the modern user. See "Users Who Know Too Much and the CIOs Who Fear Them."

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[TUTORIAL]

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Contributor Bernard Golden rebuts Nicholas Carr's new critique of open-source products. Join the discussion at advice.cio.com/theopensource.

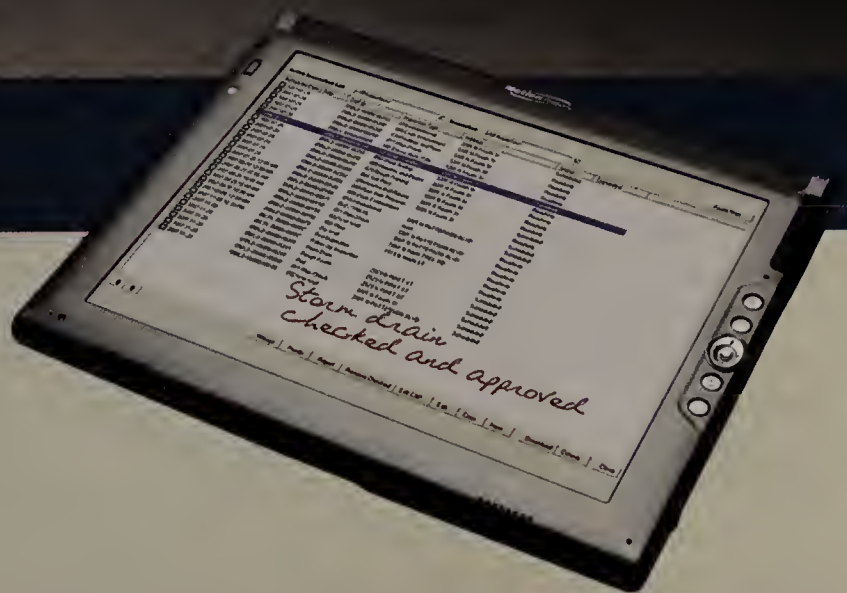
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Google Does Evil

Judge it by its actions, not its self-proclaimed benevolence



"Let me tell you about the very rich," F. Scott Fitzgerald famously wrote. "They are different from you and me." Fitzgerald's point was that the rich should be judged by special standards. Ernest Hemingway's equally famous (although perhaps apocryphal) retort dismissed Fitzgerald's argument by saying, "Yes, they have more money," suggesting that the difference was morally inconsequential.

I'm with Ernie on this.

For example, just because Google cofounder Sergey Brin is rich (number 26 on *Fortune's* 2007 list), doesn't mean it was OK this past May for Google to invest \$3.9 million in Brin's new wife Anne Wojcicki's venture, 23andMe, designed to help people browse their own genome—a New Age version of navel-gazing.

Google CEO Eric E. Schmidt told *The New York Times* that Brin had no input into the decision to invest in his wife's company, adding that Google's deliberations were totally objective and "done by the book beyond belief."

(Schmidt did not tell the *Times* how he managed to erase from his mind the fact that Wojcicki is married to the man who signs his paycheck. Perhaps the Google app that did that little job of work is still in beta.)

In any case, Google's investment in its founder's wife's venture has not elicited a great deal of outrage, but it should. Think about it: Out of all the startups that could have used Google's millions, out of all the companies in which Google shareholders could have profited by investing, Google gave its cash to Brin's wife. Any way you slice it, that's nepotism, and nepotism is not a peccadillo; nepotism is destructive and it's a habit into which the rich and powerful are prone to fall, believing the rules that apply to others don't apply to them. But as the late Robert Townsend wrote in his classic 1970 book, *Up the Organization* (recently reissued with a forward by management guru Warren Bennis), "If there's even a bare possibility that you're prejudiced, the smell of it will scare off or turn off the very people you need most. The stockholders will never know how many good people they missed." In other words, writes Townsend, "Nepotism is a way of screwing the nonfamily shareholders."

Is this just a misstep from the company with the "Don't be evil" motto? Or is it an early indicator of a growing trend? I know what I think. What do you think?

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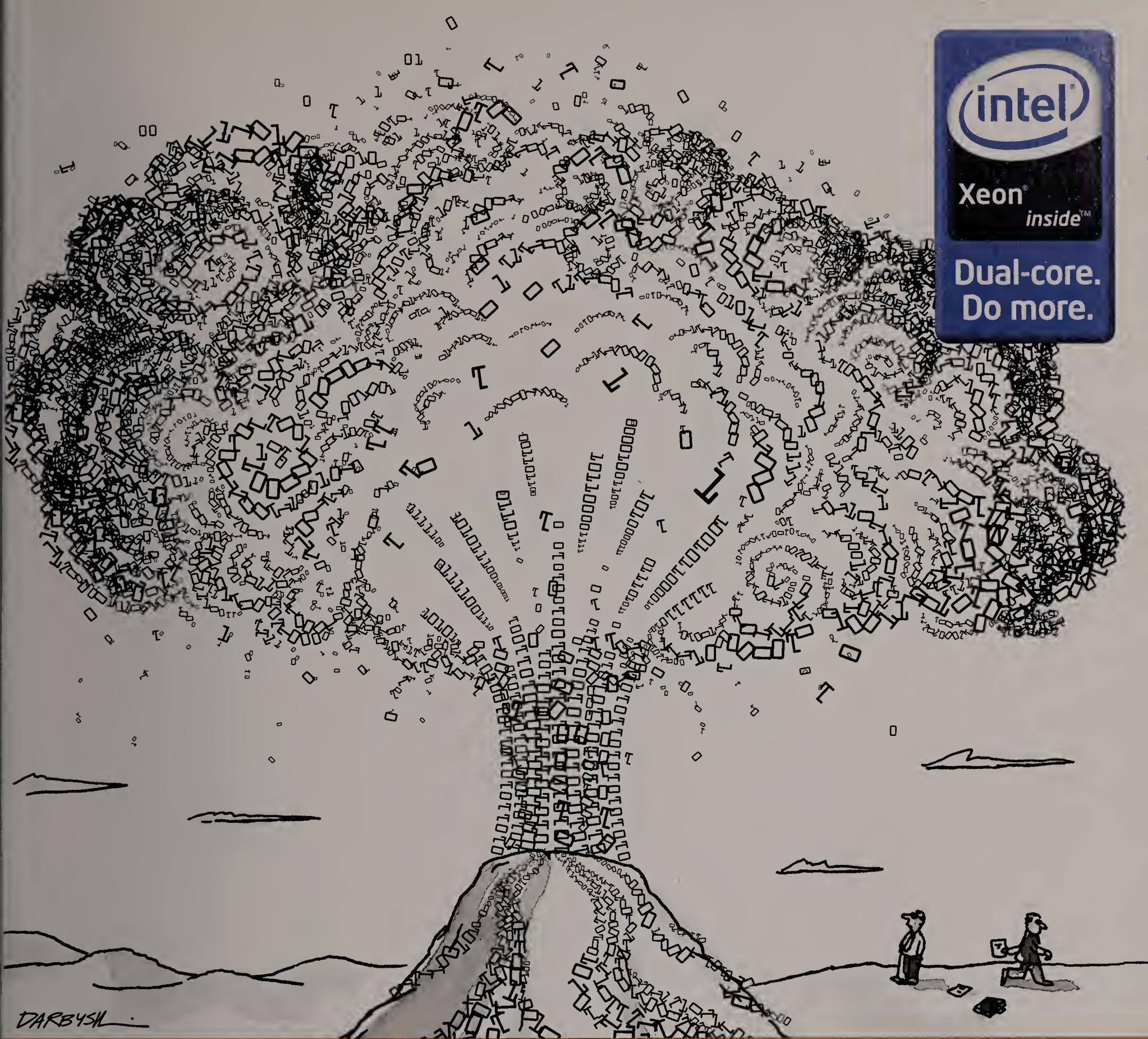
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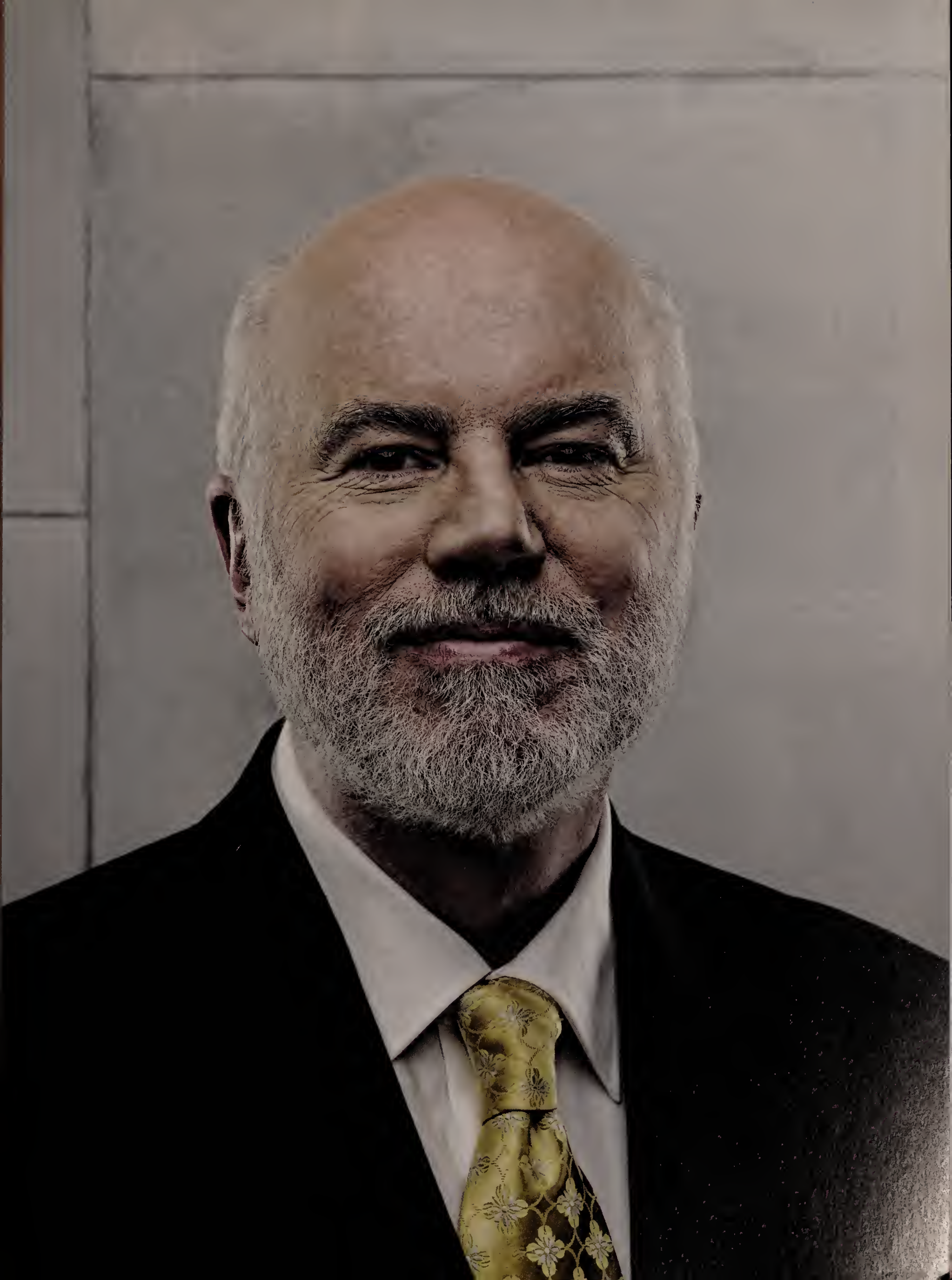
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FROM THE PUBLISHER

Forward Thinking

To be a business strategist, you have to act like one



"When it comes to the future," says John M. Richardson Jr. of American University, "there are three kinds of people: those who let it happen, those who make it happen, and those who wonder what happened."

I was thinking of Richardson as I listened to H&R Block CIO Marc West and Chevron Global Downstream CIO Louie Ehrlich introduce the CIO Executive Council's Future-State CIO program at the recent CIO Leadership Conference.

The Future-State CIO program is focused on making the future happen by advancing the CIO profession and helping it to play a larger role in driving, not just enabling, business strategy. At the core of this new program is the Future-State CIO model, created in partnership by the CIO Executive Council and Egon Zehnder International, a global management talent assessment firm. The Future-State CIO model, which you'll find in "The Secrets of C-Suite Success," Page 57, breaks the CIO role into three general aspects: the Function Head, focusing on operational excellence; the Transformational Leader, concentrating on business process transformation and IT-business alignment, and the Business Strategist, driving enterprise strategy and innovation. CIOs need to devote some of their time to each, but the program's goal is to help CIOs spend the bulk of their time as strategists.

The Future-State CIO model plots two assessment scores: the overall leadership competency performance of a CIO (the Executive Quotient) and the organization's readiness to accept an expanded CIO role. What this can reveal is the existence of any gap that divides the CIO's capabilities and potential from the organization's expectations for his strategic contributions. The goal is to eliminate the gap by changing those expectations.

It can be done. As Abraham Lincoln said, "The best thing about the future is that it comes only one day at a time." To learn more about how you can change your organization's vision of you and about the Future-State CIO program, e-mail Dexter Siglin at dsiglin@cio.com.

You can also join CIO Executive Council members Ehrlich and West for a live Future-State CIO presentation on July 19. Register for this Web conference at www.cioexecutivecouncil.com/futurestatecio.

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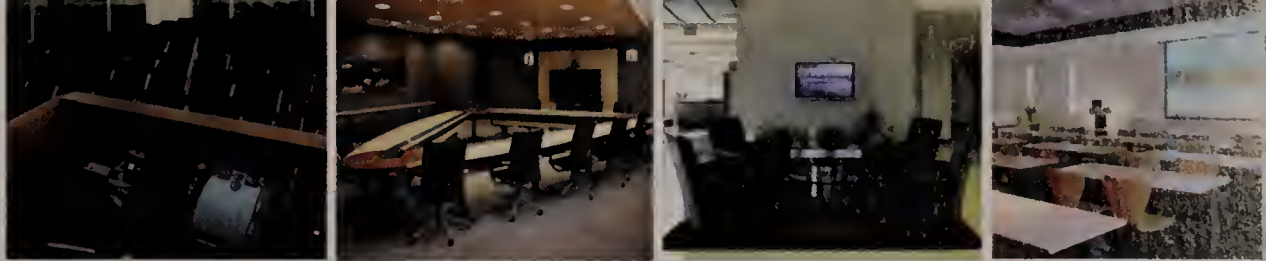


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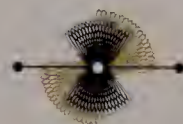
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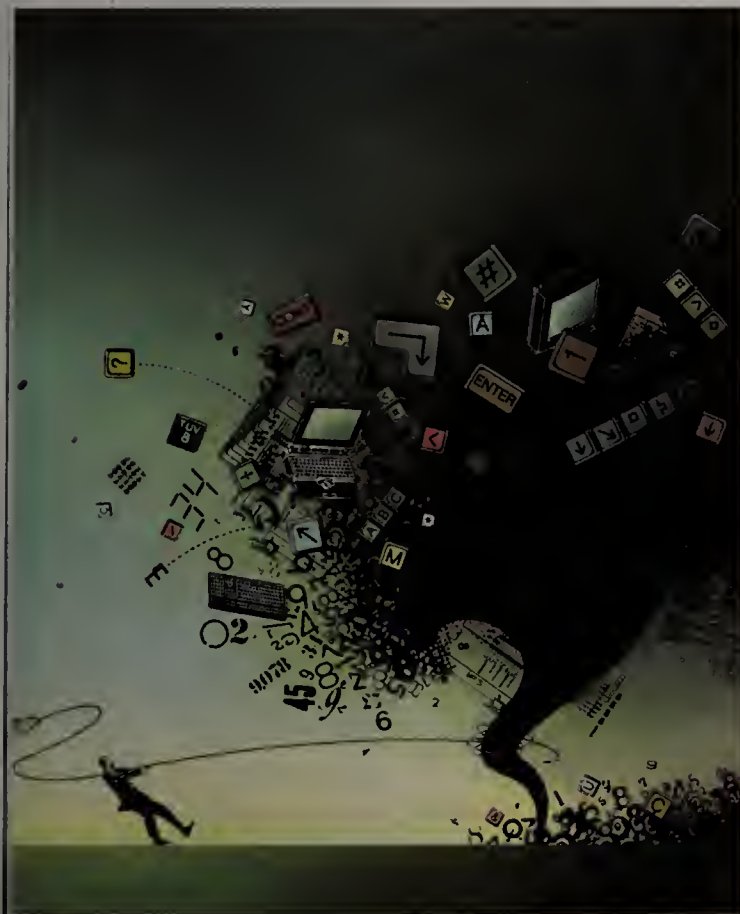
A Cure for Infomania

E-MAIL MANAGEMENT Nathan Zeldes has been battling the negative effects of information overload for a decade, since his employer, Intel, first moved from mainframes to PCs. "It became incredibly easy for people to bombard each other with information," says Zeldes, a principal IT engineer. "Within a year, we were in a total disaster state."

Since then, he has led the charge at Intel to deal with "infomania," which he describes as a debilitating state of mental overload—caused by backlogs of e-mail, plus interruptions such as e-mail notifications, cell phones and instant messages. For a time, the \$35 billion chip maker was satisfied with what Zeldes calls first-generation solutions—advocating e-mail etiquette classes and sharing advice for managing e-mail effectively. (Zeldes has made one of these solutions, called YourTime, available for free download at www.itsharenet.org.) These fixes tend to work for a year or two and then fizzle out, he says.

So last year, Zeldes and two colleagues culled the infomania research and made a case to management for more drastic intervention. What they found: "Knowledge workers spend about 20 hours a week doing e-mail, and one-third of that e-mail is useless," explains Zeldes. Worse, 70 percent of e-mail gets handled within six minutes of arrival and the average worker is inter-

Continued on Page 14



Vending Machines Go High-End

WIRELESS Vending machines are not just about soda and candy anymore. If your cell phone dies and you desperately need to replace it, these days you can simply buy a new one from a vending machine. How about a new pair of shoes? For awhile, Reebok was selling sneakers this way. Wireless technologies that enable credit card purchases are spurring companies to market a wider variety of items from the machines—from suntan lotion to golf balls to consumer electronics.

"Cashless is really opening up the marketplace for what one would call very high-ticket items," says Steve Herbert, president and chief operat-

ing officer for USA Technologies. His company's e-Port hardware, which can be installed in vending machines, handles credit card processing, tracks inventory and monitors the "health and welfare" of the machines, alerting technicians in case of trouble.

The device, used by customers including Motorola and Reebok, includes a general packet radio service cellular connection.

While the wireless credit card payment capability solves the problem of requiring end users to stick \$100 or more in cash into a machine, it also solves a related problem: At \$1.50 or \$2 for a soda, the currency systems

in a soda machine can fill up before the machine is empty, Herbert says. Operators want to allow users to buy with credit cards in order to continue selling available product.

The e-Port and related software also fuel a variety of wireless applications beyond vending. Sony uses software from USA Technologies in digital photo printing kiosks, to enable credit card authorization and head off problems. For example, if paper runs out, the software alerts a technician to refill.

Next up: a vending machine that sells cars? Now that just might be going a bit too far.

—Nancy Gohring

PUBLIC-SECTOR CIOs DEBATE:

One Vendor or Many?

MID-MARKET Keenly aware of staff and budget constraints, government IT departments wrestle with their mix of applications. Is it best to take as much ERP and CRM functionality as you can from one software vendor, or opt for a best-of-breed approach? This question came to prominence again recently as mid-market vendor Infor announced it will pay \$92 million to acquire Hansen, a public-sector applications provider.

Infor plans to create an integrated suite for state and local governments, says Jim Schaper, chairman and CEO, in what he hopes will be a differentiator against SAP and Oracle. The suite will marry Hansen's revenue asset management software with public-sector functionality from two other Infor acquisitions—Datastream and Workbrain.

While Nelson Rivera, CIO for Monroe County, N.Y., sees a need for an integrated suite, he also wonders whether such software could really handle the demands of local and state governments.

"Integration or simplification of one's application portfolio is always of interest, but cost is a large factor" he says, "and there's the question of whether one 'enterprise' system is able to meet the needs of every department or area with minimal or no customization."

Monroe County, which uses SAP for financials, purchasing and HR, did months of customization. Monroe uses Hansen's software for workforce and asset management in its public works area. The county has no formal plans to consolidate on either SAP or Hansen, Rivera says.

In the city of Orlando, Fla., CSO and Deputy CIO John Matelski has been watching with interest Oracle's recent acquisitions. (Orlando uses Oracle's JD Edwards EnterpriseOne 8.10 for ERP but hasn't chosen enterprisewide CRM.) "If used effectively, integrated applications will enable you to make your business leaner," he says. "They can streamline wasteful processes and put information in the hands of the right people at the right time."

—China Martens

Infomania

Continued from Page 13

rupted every three minutes, according to research. "When you switch between tasks, you incur a cognitive reorientation cost," says David Sward, a senior human factors engineer at Intel and one of Zeldes's partners on the infomania project. The bottom line was that Intel's workers were wasting about six hours a week.

Intel management, which was in the middle of an efficiency improvement drive, proved receptive. Intel will pilot several next-generation solutions later this year, encouraging what Zeldes calls "technology-assisted behavior change."

For example, Intel plans to try an e-mail client-side program that intervenes when the sender violates e-mail etiquette and coerces good behavior (for example, "If you really mean to reply to all these people, please check the boxes next to each name you truly need.") Other planned pilot solutions include enabling workers to shut down e-mail and IM notification for specified durations; e-mail "quiet time" methodologies such as batching e-mail on the server and delivering it once an hour; "no e-mail" Fridays (or another specified day); and moving enterprise-wide status reports and organizational announcements from push e-mail to an RSS subscription. The goal: Embed the successful programs into an overall behavior change education campaign.

What's been surprising is the attention this work has garnered outside of Intel, says Zeldes. "We have gotten calls from 100 organizations, from the U.S. Army to the Salvation Army to everyone in between," says Zeldes. "It's the beginning of an awakening."

Zeldes and his team are collaborating with the handful of companies exploring more radical solutions, but he insists you don't need a dedicated team or a million-dollar budget to attack the problem: "All it takes is one manager to decide to do something about it."

—Stephanie Overby

How to Save **\$105 Million** on IT

Should a CEO encourage his company to build a truly world-class IT organization? Do the math:

World-class IT organizations spend 7% more per end user on IT operations than typical companies. For a typical Fortune 500 company, that translates into an extra **\$29 million per year** in IT spending.



This investment turns into reduced costs and improved performance in finance, procurement, human resources and other areas of back-office operations—to the tune of **\$134 million per year**.

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CELL PHONES Fueled by the Sun

MOBILE Motorola has found a way to keep your mobile phone charged using only sunlight. The company recently received a patent for an LCD that includes solar cells capable of charging the battery in a mobile phone or other portable device. The patent, which offered no hint of commercial product plans or timing, also outlines how solar cells can be added to OLED (organic light-emitting diode) and touch-screen displays.

The basic premise has been proposed before: A display screen is stacked over one or more solar cells, which are charged by the light passing through the display. But earlier designs allowed a relatively small amount of light to reach the solar cells, so little power was generated even in the best light conditions, Motorola researchers said in the patent.

The ultimate goal is to develop a device that could remain charged indefinitely, without requiring users to plug it into a socket or carry external chargers. Until now, the major obstacle has been the LCD's polarizer and reflective screen, which sends light back to the viewer. In earlier designs, the reflective screen allowed less than 6 percent of the available light to reach the solar cells, Motorola said.

To solve this problem, Motorola proposed using either cholesteric liquid crystal or polymer-dispersed liquid crystal in the display, instead of super-twisted nematic liquid crystals. This change in materials eliminates the need for both a reflective screen and polarizer in the LCD screen. As a result, Motorola claims as much as 75 percent of available light is able to reach the solar cells, providing a sufficient amount of power to charge the battery of a mobile device.

Motorola rival Nokia also recently applied for a unique U.S. patent: Nokia is working on technology to warn cell phone users of impending lightning strikes.

—Sumner Lemon



GE's Loss May Be Your Gain

ON THE MOVE General Electric has long been known as an incubator of IT talent. Among the CIOs that the \$163 billion company has groomed are Joe Eckroth (now executive VP at New Century Financial), Kathy Lane (now CIO of National Grid) and Mitchell Habib (now executive VP of global business services at Nielsen.) However, GE has historically been a difficult target for headhunters.

That's changed, says Gerry McNamara, a partner with executive search firm Heidrick & Struggles. "Now they're willing to take our calls, and we've placed two [execs from GE]," he says.

Recruiters used to bump up against



Dave Schoenholz

the generous compensation that GE employees received during the company's heyday under Jack Welch, McNamara says, but since GE has fallen on tougher times, "that wealth-building opportunity

is not there any longer." Also, he says, as GE has skinnied down, fewer jobs exist inside the vast conglomerate. Finally, as long as Gary Reiner remains in his position as corporate senior VP and CIO, which he's held since 1996, that slot is out of play. So GE's IT stars are listening to recruiters' pitches, and that's good news for CIOs searching for talent.

A few GE IT executives have recently moved on:

Charles Cautley left his post as CIO of GE Capital to join gaming technology company GTech as its senior VP and CTO in May.

Dave Schoenholz went to work for ING U.S. Financial Services' CIO Steve Van Wyk, as the insurance company's head of infrastructure services. Schoenholz spent 12 years with GE, most recently as its global leader of infrastructure operations for its infrastructure shared services organization.

Lisa Hoffman joined Centex Homes in August 2006 as VP and CIO, after her stint as director of corporate systems at GE's commercial finance division.

—Meridith Levinson

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BY JOHN P. MELLO JR.

Windows Administrator

job description: A network administrator who is primarily concerned with software and whose responsibilities include security, implementing network policy, managing user access and network troubleshooting, as well as designing, installing, configuring, administering, and fine-tuning Windows operating systems and components across an organization. Some career experts say the evolution of IT's business role makes this job a possible career path to CIO.

elimination round:

Van De Voort recommends asking candidates how they dealt with the last service interruption they faced. "If somebody's answer is, 'No system I ever managed went down,' I'd say, 'I don't want you for this job,' because I'm assuming that someday my system is going to have problems. Keeping the thing purring is important, but how you handle customers and the technical demands when it's not purring is also very important."

why you need one:

Because so many businesses run Microsoft software on their networks, the Windows administrator's role is key to keeping a company's operations running smoothly. That role will become even more important as companies move to Vista. Moreover, organizations are becoming increasingly reliant on this person to get things done. "Hardware isn't what defines chunks of work as much as the applications," observes Dave Van De Voort, a principal in the Chicago offices of

Mercer Human Resource Consulting.

desired skills:

Knowledge of Windows Server 2003, Microsoft Exchange, domain and configuration controllers, global catalogs, Lightweight Directory Access Protocol (LDAP) and Active Directory. The minimum education requirement is a two-year degree in computer science; a general business degree with software training is also valuable. "They have to know their way around network operating systems as well as desktop operating systems," notes John Estes, vice president of Robert Half Technology. Be prepared to give a 10 percent premium to IT staff who possess Windows 2000/2003/XP administration skills, since a vast amount of U.S. businesses run Windows networks and that skill set is in high demand.

how to find them:

Look for people in advanced production, service or support positions. "It's not a job that a person could move up to from a purely administrative role without much technical background," Estes says, "but it's certainly a job that could be done by somebody from the operations side or the help desk side who has pursued training in software development and systems integration."

what to look for:

The ability to make complex technology topics accessible to laypeople. Must be able to take direction from a variety of people, as well as give direction. Can lead and rally teams. Grace under pressure. Quick learning curve as applications change. Experience negotiating with vendor support. Familiarity with operational metrics used in service-level agreements.

growing your own: "Black belt"

desktop support people are ripe candidates, as well as desktop architects and developers. Another fertile area is quality control: people who know the processes behind system installation, support and functionality. "This is a job where an employer can bring in people with a basic degree in computer science or a degree in business with a computer background and grow their own to a greater extent than some other areas," Estes notes.

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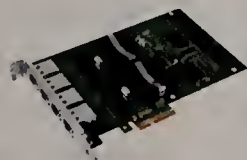
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Squeezing (*Even More*) Value from Your Application Investment

You've Built Your Business Infrastructure By The Book. But Is There An Opportunity To Get Even More Value From Your IT Investments?

A perfect storm of business factors and IT shifts is causing senior executives to rethink their approach to ERP, CRM and other core applications. In the process, many of them are acquiring a new appreciation for the transformative power of middleware. Read on to discover the ways your organization can benefit now from this cost-effective strategy—and how to download a dynamic new white paper with relevant solutions and strategies.

What do you do when the applications that have helped you succeed now seem unable to sustain your newest business initiatives?

Consider the challenge facing one growing, global business: Enhancing the ability for customer service representatives to cross-sell and up-sell was key to expanding its market position and revenue streams. On the back end, the worldwide nature of its business, accelerated by offshoring trends, required a global approach to managing customers and processes.

It looked like a daunting challenge that existing business applications couldn't handle. But with the help of middleware, the company was able to provide customer service representatives with information from its multiple systems—including order information, CRM and ERP data—improving the potential for additional sales. Middleware also provided the company with an integrated foundation that enabled it to better manage worldwide operations and even add new countries and regional ventures in the future.

Middleware Redefined

Middleware has been around for years. But significant changes in the way it is defined and deployed suggest that now is the time to get reacquainted with the term. At one time, middleware was associated with purely behind-the-

scenes capabilities such as enterprise application integration (EAI) and application run-time platforms called "application servers." With the advent of new enabling technologies such as SOA and growing business challenges brought on by mergers and acquisitions, globalization and decreasing cycle times, the importance and scope of middleware and the middle tier have been expanded to include:

- Portals and new Web 2.0 technologies
- Business intelligence, including dashboards and analytical tools
- Content management and document retention
- SOA integration
- Identity management to help ensure security

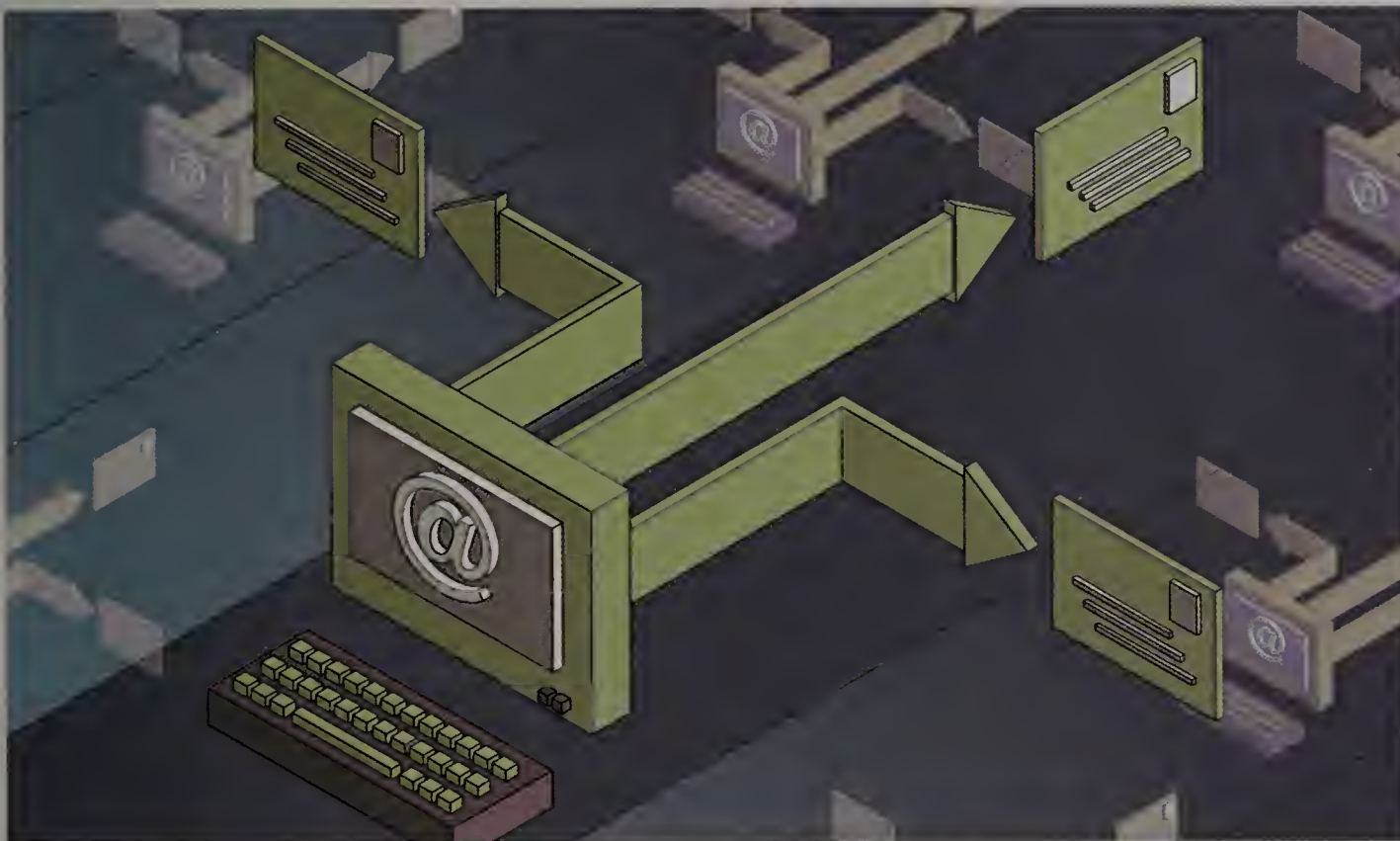
Taken together, these new capabilities offer an opportunity to re-energize CRM, ERP and other bedrock applications on which your business depends (and which may now be limiting your growth and adaptability), while better connecting, managing and enriching your business processes.

Power-up Core Business Processes

Efforts to use middleware to boost the performance of key business applications and core business processes are now bearing fruit for business leaders across industries. For example:

- A giant in the home products market empowered its global independent sales force by using middleware to integrate order management and document management while adding new collaboration capabilities.
- A high-tech company ramped up security and slashed regulatory risks across a heterogeneous collection of sales, financials, manufacturing and HR applications.
- A company long dominant in the office automation solution business found that middleware allowed it to focus and streamline sales operations while improving customer service and support.

Middleware offers a means for permanently simplifying operations without compelling a rip-and-replace strategy or a massive reinvestment.



One key to these companies' success was getting past the notion that middleware is "just about plumbing" to grasp its role in their applications and IT portfolio strategies. For example: When a CRM application integrates poorly with other applications, the ripple effects can spread to functions such as the supply chain, logistics or billing. But middleware can support the creation of advanced portals, enhanced with Web 2.0 capabilities, which can bridge application and business functions across the enterprise. On a practical level, that means staff can get all the information they need from the CRM system—quickly—allowing them to provide better service and to act more strategically, i.e., implementing up-sell programs or simply providing more efficient service by connecting front-line service with information and teams to resolve issues.

Consider, too, the plight of finance professionals. In the hot seat thanks to increasingly complex and stringent regulations, these executives seek but rarely find the means to get regular, fast, thorough, accurate auditor-ready information. Business-friendly process-modeling tools, business intelligence, identity management capabilities and document retention systems provide a proactive, cost-effective and repeatable approach—covering an organization's financial systems and other compliance hotspots.

Supply chain management—with all the built-in handoffs to numerous systems run by upstream and downstream partners—can be sim-

plified and made more dynamic. And human resources, the department that makes every organization go, can discover new efficiencies—such as on-boarding and off-boarding personnel with less traditional paperwork but even better records management—as well as become a more strategic player by incorporating operational information into workforce planning and management.

Moving Forward

Business requirements keep accelerating—and changing. So it's no longer sufficient to take a silo-centric approach to core IT applications and business processes with an expectation that it will solve every problem. By grasping the potential business benefits of teaming middleware with existing business applications, enterprises can move to new levels of performance and response without making huge new investments and without dangerous disruptions in business processes.

Middleware offers a means for permanently simplifying operations without compelling a rip-and-replace strategy or a massive reinvestment in applications or point solutions. Instead, middleware in effect deals with interfaces—the ones that people see and use, and the ones that matter to individual applications. The result is people and systems functioning more productively in the present as well as an infrastructure that becomes more adaptable and ready to grow for the future. ■

Get the Download on the Business Value of Middleware

ERP, supply chain and manufacturing, and CRM applications tend to be a center of gravity in nearly any IT portfolio. Want to take these applications to an even higher level of performance and innovation? Visit www.cio.com/whitepapers/oracle to download the white paper "Why Middleware is Now Mainstream" for new solutions, examples and business function-specific strategies for maximizing these applications via middleware.



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ESSENTIAL

FROM INCEPTION TO IMPLEMENTATION—I.T. THAT MATTERS

technology

Edited by **Laurianne McLaughlin**
lmclaughlin@cio.com



Can you increase customer satisfaction and sales by improving your external Web search strategy? CIOs who've done it share their secrets.

Searching for Happy Customers

BY GALEN GRUMAN

SEARCH | Mess up internal search and you'll frustrate your employees. But mess up external search and you'll alienate your customers. No wonder that e-commerce company execs like Jeff Zwelling of YLighting bear down hard on this problem: Zwelling changed his website's search engine three times in the past four years, unhappy with the search results that his company's site was giving customers—or rather wasn't giving them. Nothing changed until the fourth try in late 2006.

Graeme McCracken, the COO of RB Search, a subsidiary of Reed Business charged with making the publisher's content available through the consolidated Zibb.com site, faced the same frustration three years ago. His search engine didn't give readers a complete, accurate picture of his company's many magazines and newsletters.

Mired in the problems of external search, both companies found that the Google approach—the one most commonly tried first—doesn't always keep customers happy.

E-commerce and media businesses have similar needs for external search: guided navigation and contextual search to help users quickly narrow down their desired results using

categories, user profiles and other meta-data. Even database-driven e-commerce sites must go beyond database content to handle vague searches like "red lamp," says Zwelling, YLighting's president.

External (keyword) search must help customers get to the same result as using the site's navigation, says Chris Cummings, CIO of online retailer eToys Direct.

By contrast, internal search focuses on discovering data "hidden" in documents, databases, and so forth. Google follows the internal search approach: Users typically want anything that answers their query, not a specific, repeatable result.

E-commerce vendors and content publishers have come to these realizations early,

He tried to tag the source material in the content management system to make the right information available to the search engine. But with 200 million documents and new ones being created all the time, the RB staff could not tag all the content to provide the categories that a search engine would use to find appropriate content, suggest related results and deliver related promotions. In fact, McCracken realized that perhaps only 2 percent of the content had been tagged, despite all the effort spent over a couple years. Worse, "the tags were not consistent" among Reed's subsidiary companies, he says.

So McCracken brought in a tool from Teragram that helped automate tagging

"Keyword search must help customers get to the same result as using the site's navigation, no matter what path they take."

—Chris Cummings, CIO, eToys Direct

says Tony Byrne, founder of the research firm CMS Watch, because the success of search relates directly to sales of goods and advertising. But other businesses can use search to improve customer self-service (and reduce expensive calls and e-mails to customer support staff), he notes.

Such efforts are rare today. "There's no revenue from better customer service, so it's hard to fund these projects," says Brian Babineau, a senior analyst at the consultancy Enterprise Strategy Group. But he expects savvy companies to follow the media and e-commerce firms' examples to increase customer retention.

Solve the Context Problem

When you embark on an external search project, it's important not to get overwhelmed by an early requirement—classifying all the data to be searched. One of the hardest issues for RB Search's McCracken was bringing context into the search tool.

of content after the fact, using a rules engine. Doing so meant creating the taxonomies and an ontological (conceptual categorization) dictionary of 210,000 terms—something that must be kept up to date by people—but this made the tagging of the 200 million documents possible, he notes. McCracken then deployed Fast Search & Transfer, a search engine that provides the ability for search users to navigate through the categorized results derived from the tagged content.

The key to this software-assisted classification, McCracken says: You can't depend completely on automation. Human experts must adjust the software's rules and results. But when the tools are properly tuned to a company's content, IT can then apply them to a vast quantity of documents, he says.

The U.S. General Services Administration took a similar approach to making public documents from multiple federal, state, and local government organizations

TOOLBOX

Slicker Search

Many search engines will give external users access to your website's content. But not all provide the ability to infer context from the content and then let an enterprise refine and manage that context. Leading players include Endeca Technologies, InQuira, Progress Software, SLI Systems, Visual Sciences and Vivisimo. All but InQuira and Vivisimo also offer search-based merchandising capabilities for e-commerce sites. SLI Systems provides its tools as a hosted service, while the other tools are designed to be deployed at the enterprise.

Teragram provides a tool to create the metadata from which various search engines can access the context.

Several companies can help you extend external search capabilities. For example, Baynote tracks users across the Web to build a profile of interests that a search engine can use invisibly to better target search results. And Nexidia offers search technology for audio and video content, using analysis of the audio to determine contextual matches to search terms.

—G.G.

available via the USA.gov website. It used Vivisimo's clustering technology to contextually index the content from the multiple websites and Microsoft's MSN to provide the search engine and index. GSA staffers now hand-tune the index and ontology as needed, and can create their own indexes quickly when the need arises, such as pulling together all Hurricane Katrina-related resources when the devastating storm struck in 2005, says John Murphy, direc-

CONDITIONS *for* SUCCESS

A CIO Dialogue on IT Leadership

CIO Publisher Gary Beach recently sat down to discuss IT business value with four noted leaders: Andre Mendes, CIO, Special Olympics; Steve McDowell, CIO, Holiday Retirement Corp.; Steven McIntosh, CIO/SVP, Jackson Enterprises; and Guillermo Diaz, Vice President of Information Technology, Cisco. This dialogue was recorded for a webcast. Following is an excerpt from their roundtable.



LEARNING TO LEAD

GARY BEACH: Where did you get your best leadership training and advice?

ANDRE MENDES: Without a doubt my best learning opportunities were my mistakes, and some of them were enormous, so I had lots of learning from that.

GUILLERMO DIAZ: I agree with that. I think you miss 100 percent of the shots you don't take. I agree totally that you learn from the experiences that we encounter.

BEACH: The State of the CIO research this year suggested that from 2006 to 2007 IT leaders said communicating the business value of IT at their organization got tougher. What do you do at Cisco, Guillermo, to market internally the value of IT and your aspect of leading IT?

DIAZ: I think it's hugely important to market IT for a couple of reasons. Number one is to really get the business buy-in, but also to make the people within your IT organization feel proud to be part of IT. The more that they understand how their work contributes to the bottom line, the more it's going to drive morale, it's going to drive the impact, it's going to keep momentum.

But the other thing from a business perspective is I have my communications jointly with the business. So, every communication that I send out is myself and my business partner or partners, depending on the audience or the communication I'm sending out, so that way it's coming from the business.

STEVEN MCINTOSH: I think that to be an effective IT leader you have to understand your business and understand your customers, but also understand the people who are working for you and how to maximize their productivity given whatever technology constraints that you have or whatever

*"The ability
to lead people
comes from the
heart, and it
starts with
our leader."*

— GUILLERMO DIAZ

innovations you're trying to put in place with your organization. So, I think effective IT leadership is much more about leadership of people.

RECRUITING STAFF

BEACH: Andre Mendes, what leadership qualities do you look for at Special Olympics when you're recruiting IT staff?

MENDES: To me, a lot of it has to do with flexibility, having an open mind, and understanding that some of the knowledge that you might have had in the past might no longer be useful, that exerting leadership is above all adapting to the circumstances at hand and then trying to provide the maximum value for what is needed at the time.



From left, Steven McIntosh, Steve McDowell, Andre Mendes, Guillermo Diaz and Gary Beach

DIAZ: I totally agree with that, the inflexibility. I always ask the question about what is your biggest success. And I always know when people answer their family, their culture, it really comes down to that. And especially at Cisco, that's huge. The ability to lead people comes from the heart, and it starts with our leader.

ON MENTORS

BEACH: Guillermo and others, did you have a mentor?

DIAZ: One of the mentors whom I've had for a long time taught me about ROI— Relationships Over Issues. The idea is that down the road, the return on building those relationships will yield many more dividends than the return yielded on solving the initial issue.

MENDES: My father was always a mentor to me as a businessman. And basically the lessons that he gave me were from a humanity standpoint, and what really is important. A lot of that tends to drive most of my decision making—trying to be extremely pragmatic and selfless as a leader so that the community is really the driving force.

STEVE MCDOWELL: They've been huge. I have had several, and I've probably got an amalgam of bosses and people that I've known over the years that I try to emulate in different situations, people who—from the very gregarious smiling, friendly-type person, to the task master who made sure the organization was going in the right direction at the right time and everybody was making progress. I try to use them all at different times.

BEACH: What advice would you give to viewers who are looking for a mentor? What should they seek out?

MCDOWELL: They should look for somebody who is accomplished but not focused solely on one thing. Find somebody who can help you on the relationship aspect. And look for more than one person.



Want to learn more about leadership? The conversation continues at www.cio.com/cisco/leadership

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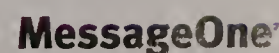
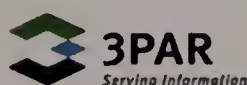
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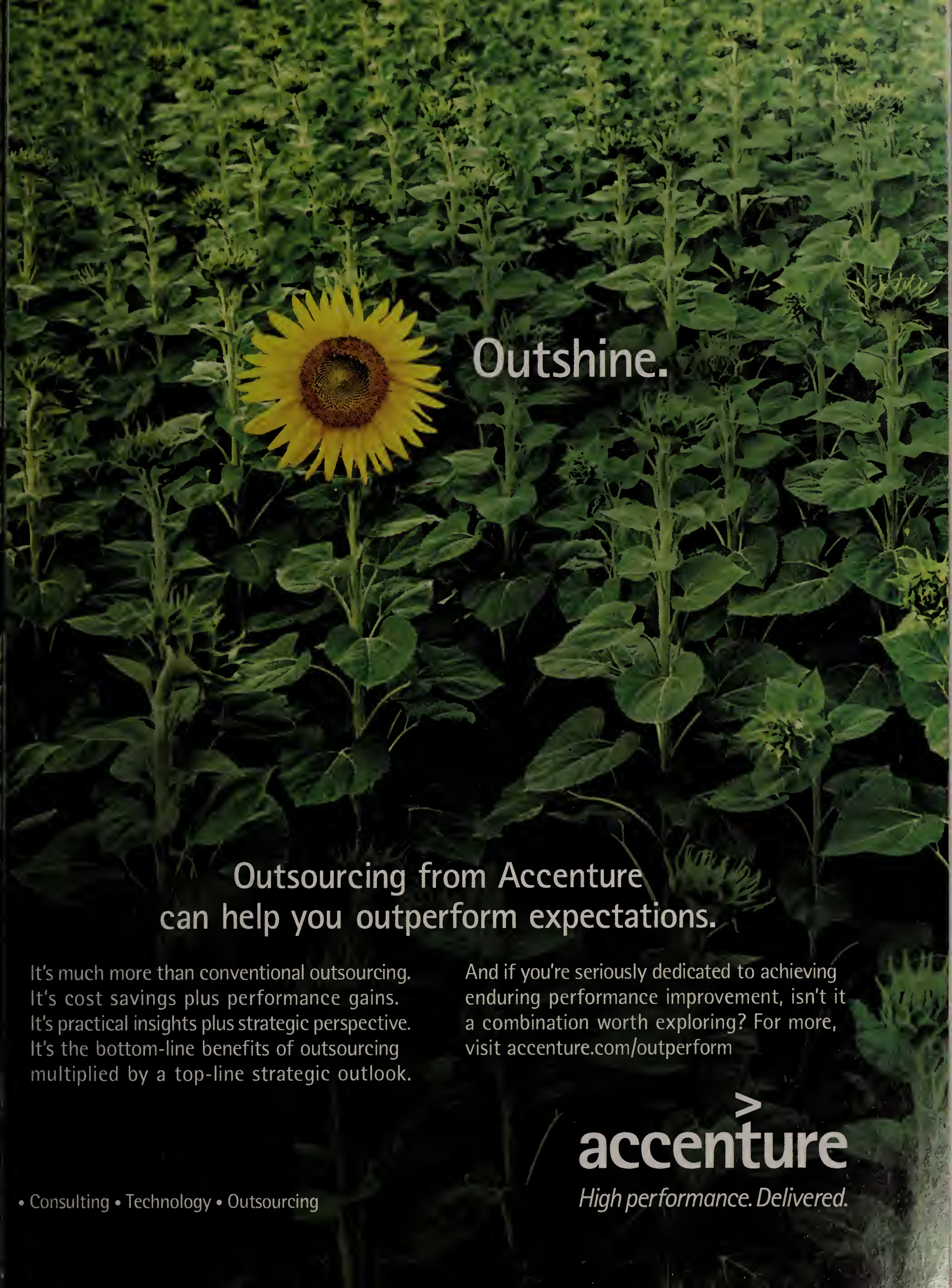
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To keep the index and ontology relevant, you'll need to regularly analyze search queries and results to detect new user search patterns and expectations, says Ken Harris, CIO of natural products distributor Shaklee. He made this realization after replacing an old search engine with one from Visual Sciences (until recently known as WebSideStory) as part of a general Web modernization effort. The new tool came with analytics capability to help define relevance in results.

"We then realized we didn't know internally what relevance was," he says. He quickly began to fill that gap, so the staff could tune the results to improve sales.

Make the Sales Connection

In e-commerce, the underlying product data is typically well-structured and tagged, so the need for additional context may not be as apparent. (The tagging effort is also easier for e-commerce firms than for media companies, notes CMS Watch's Byrne.)

Most companies know to account for common misspellings by creating internal term maps, so for example, a customer looking for pendant lights will still find them if he types "pendent" in a search query, YLighting's Zwelling notes. ("Pendant" is misspelled in nearly half of his site's searches.)

And most companies know that databases may not be consistent, due to human error or differences in suppliers' own taxonomies, so additional effort is needed to also search for synonyms and to look across multiple fields for some terms, he says.

But as Zwelling discovered, customers don't think in terms of just product specifications that match to product databases. And this requires more sophisticated work. For example, a query for "red table lamp" could miss lamps that come in a red finish

but where the color choices are not called out in the database's color field or description. But a search engine such as the SLI Systems hosted search tool that he uses can detect all red lamps despite taxonomic differences, then let customers quickly sort them by room or material, he says.

Sometimes there's a hidden need to adjust context. At Broder Bros., which sells shirts and other items that can later be customized with company logos, executives assumed that basic keyword search was sufficient, since the company sells to distributors who know the product codes or have a paper catalog. But an analysis of search patterns showed that about 15 percent of all searches were free-form: These people were essentially researching what might be available, says Mike Fabrico, VP of IT. Broder Bros.' search approach didn't serve that need—and potentially lost sales. So the company replaced its search engine with one from Progress Software that could support contextual searches.

Another tip: Don't overlook failed searches, says John Cortez, director of applications at Shaklee. He regularly monitors searches that result in no hits: This helps him identify new contextual mappings that would lead to appropriate results, and determine products that customers might want but aren't offered. Then he can give sales an indication of potential opportunities.

Mind the Gaps

When a search engine has the right context to find the right results, the next challenge is to present them usefully. Most modern search engines can filter results based on checkbox and menu selections, as well as attributes such as price or availability.

But many merchants will want to go beyond that. After YLighting's Zwelling analyzed search histories, he noticed that the sales conversion rates for some items were lower than expected, even after a successful keyword search.

Further usability studies explained the gap: Even if a search for "red lamp" turned up a lamp that met the needs of a customer, the image displayed might show the lamp in

46% of leading online retailers struggle with the proper way to manage website search.

SOURCE: Aberdeen Group

a different color. People reacted to the image rather than the text—and didn't realize the displayed lamp was available in red.

Zwelling then added images tagged by color, so the search engine could display the appropriate finish. Sales increased, and he attributes part of that to the search changes. (He declines to quantify the sales uptick, noting that it had multiple possible factors.) At Reed, search traffic increased 59 percent after the search engine retooling, and total traffic grew 19 percent, McCracken says.

Unfortunately, at many organizations today, external search doesn't rise to the CIO's attention, says Accenture's Michael Kuhn, practice lead, Accenture Information Management Service, Europe, Africa and Latin America. "Yet it's a top priority for the user," he says. One result: "There is a lack of skills in the IT department on how to deal with search. They think of the search technology only, not of the metadata underlying it. And search is treated as an afterthought of a Web presence strategy," Kuhn adds. That's a mistake. **CIO**

Galen Gruman (ggruman@zangogroup.com) is a frequent contributor to CIO. Send feedback on this article to Technology Editor Laurianne McLaughlin at lmclaughlin@cio.com.

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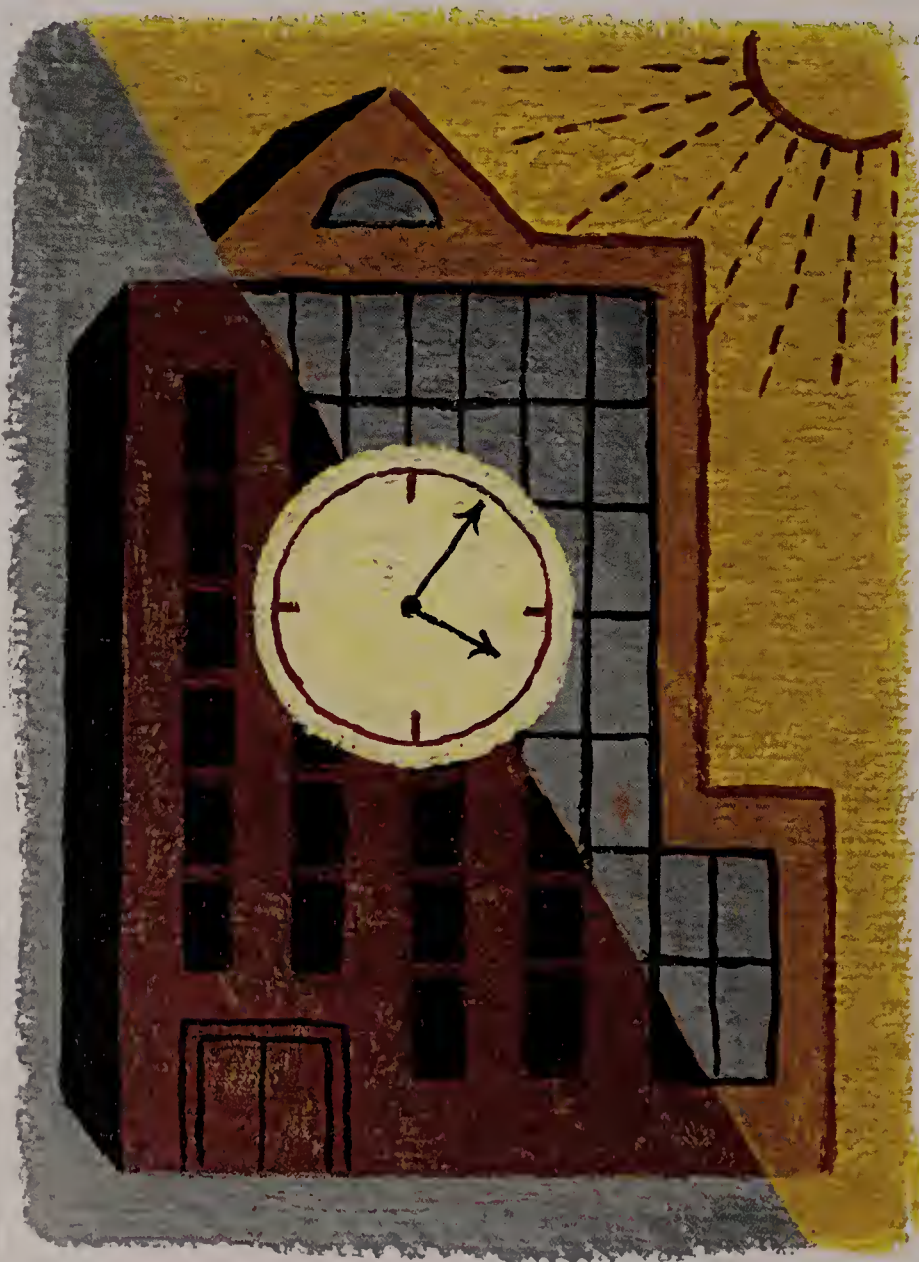
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Back in the last century, when business and society changed more slowly, companies could afford to take their time fine-tuning their operations. Today, the marketplace rewards those companies that change most quickly.

Just ask Dennis Donovan. Donovan, who spent most of his career at GE and then spent several years as an executive at Home Depot, notes that through the 1990s, Jack Welch focused on changing one area of business at a time: There was the structural revolution of the early '80s, followed by a cultural revolution, such as the Work-Out (Welch's method for empowering workers to tell managers about business problems). Next, he tackled business processes by implementing Six Sigma, followed by the digitization revolution of the '90s. "Today," Donovan observes, "we don't have that luxury. If you have an eight-cylinder engine, you have to run on all cylinders; you have to have an [integrated] model that would focus on all aspects of business in parallel and quickly."

With shorter cycles of innovation and increasingly frequent technology breakthroughs, the serial model of corporate change is no longer effective. The interplay between the information revolution, the rapid pace of globalization and fierce competition have required a new model that enables companies to change quickly.

I have researched more than 500 companies to identify the key principles and practices of transformation that are effective today. I found that successful transformation efforts tend to be 1) all-encompassing, 2) integrative and 3) fast, and also have full, passionate commitment and buy-in, especially at the top levels of the organization. During the past 13 years, companies that have taken this holistic approach performed better than those

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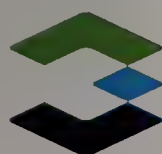
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that followed the serial reengineering model. The results were similar regardless of their industry and varied little according to the business cycle.

A New Model for Change

First and foremost, companies that have successfully transformed themselves began by analyzing all aspects of their operations, leaving no stone unturned. Once they identified areas for improvement, they moved quickly, reducing downtime and hand-off periods. They ran transformation initiatives in parallel, not only for speed and efficiency but also to promote better integration—to take advantage of synergies between different parts of the business. Last, successful companies all had fully committed leadership. Lack of buy-in at the top level, as many others have observed, negatively impacts the transformation effort by stalling the effort and creating, rather than removing, obstacles.

Consider the cases of General Motors and Nissan. Both large automobile manufacturers faced dire circumstances at the turn of the millennium. However, the transformation efforts undertaken by the two companies were drastically different and have had drastically different results.

GM approached change in the old way: a piece at a time, over several years. GM's approach was consistent with its culture, says Jay Conger, a visiting professor of organizational behavior at the London School of Economics.

"GM has always been a very siloed corporation with all of its different divisions really operating like separate companies," Conger observes. There have been numerous reorganization efforts at GM, and most have not fared well, because of the turf battles and independent nature of GM's divisions."

This lack of integration across the company is reflected in the fact

How to Execute Change

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that its transformation initiatives themselves have not been integrated, with the company addressing only a few key issues at a time. At different times, GM has made changes to human

resources, information technology and manufacturing lead time, among other functions, without fully exploring how these aspects of the business relate to each other.

Furthermore, cost cutting (a poor long-term strategy) has been a major component of GM's transformation effort. Nearly two years ago, GM announced plans to eliminate 25,000 jobs in the United States—about 17 percent of its U.S. workforce—by closing several plants in the coming years. Aside from the drawn-out time frame for this initiative, GM has encountered tremendous difficulty getting buy-in for the change effort from middle management. The result? GM's income went from a net profit of \$420 million six months after Rick Wagoner took the helm of GM in 2000 to a loss of over \$10 billion in 2005.

CIOs are critical to companies' success with rapid change—but only if they take an integrated view of both the business and its transformation. Unfortunately, many IT departments remain stuck with old models for implementing change.

On the other hand, look at Nissan, where CEO Carlos Ghosn joined as COO in 1999. In the eight years prior to Ghosn's arrival, Nissan had lost nearly 30 percent of its global market share. Management became complacent, product development had come to a standstill, and the company was \$22 billion in debt.

A few months after Ghosn came on board, a big portion of the company was engaged in developing an integrated plan to address many of Nissan's pain points. The Nissan Revival Plan incorporated not only cost-cutting efforts to reduce debt but also strategies for long-term growth. Through this integrated, all-encompassing and speedy transformation effort, Nissan reached its stated goals (such as launching 20 new models, reducing debt by half and becoming profitable) within two years, an entire year ahead of schedule. Nissan's success prompted Ghosn to seek an alliance with GM last year, although the talks have since broken down.

What Rapid Change Means for CIOs

CIOs are critical to companies' success with rapid change—but only if they take an integrated view of both the business and its transformation. Unfortunately, within many of the companies I studied, IT departments remained stuck with old models for implementing change. In fact, reengineering as propounded by management consultants throughout the '90s failed because of its deliberateness. The methodology often takes three to five years to execute and entails addressing one narrow section of an organization—such as finance products or supply chain processes—at a time.

Among the companies that succeeded at business transformation, CIOs were essential leaders of integrated, fast, top-down change efforts. They often helped create the holistic methodology for change that was then adopted by the top executive team. Furthermore, the successful CIOs often led the implementation of individual change initiatives by involving the cross-functional senior executives in a synchronized and well-planned process.

The bottom line: Change is inevitable. It's how you make it that determines whether your company will thrive. **CIO**

Behnam Tabrizi is a professor at Stanford University. He is an expert on business transformation and consults to Fortune 500 companies. He can be reached at behnam@stanford.edu. To comment on this story, go to the online version at www.cio.com/article/110401.



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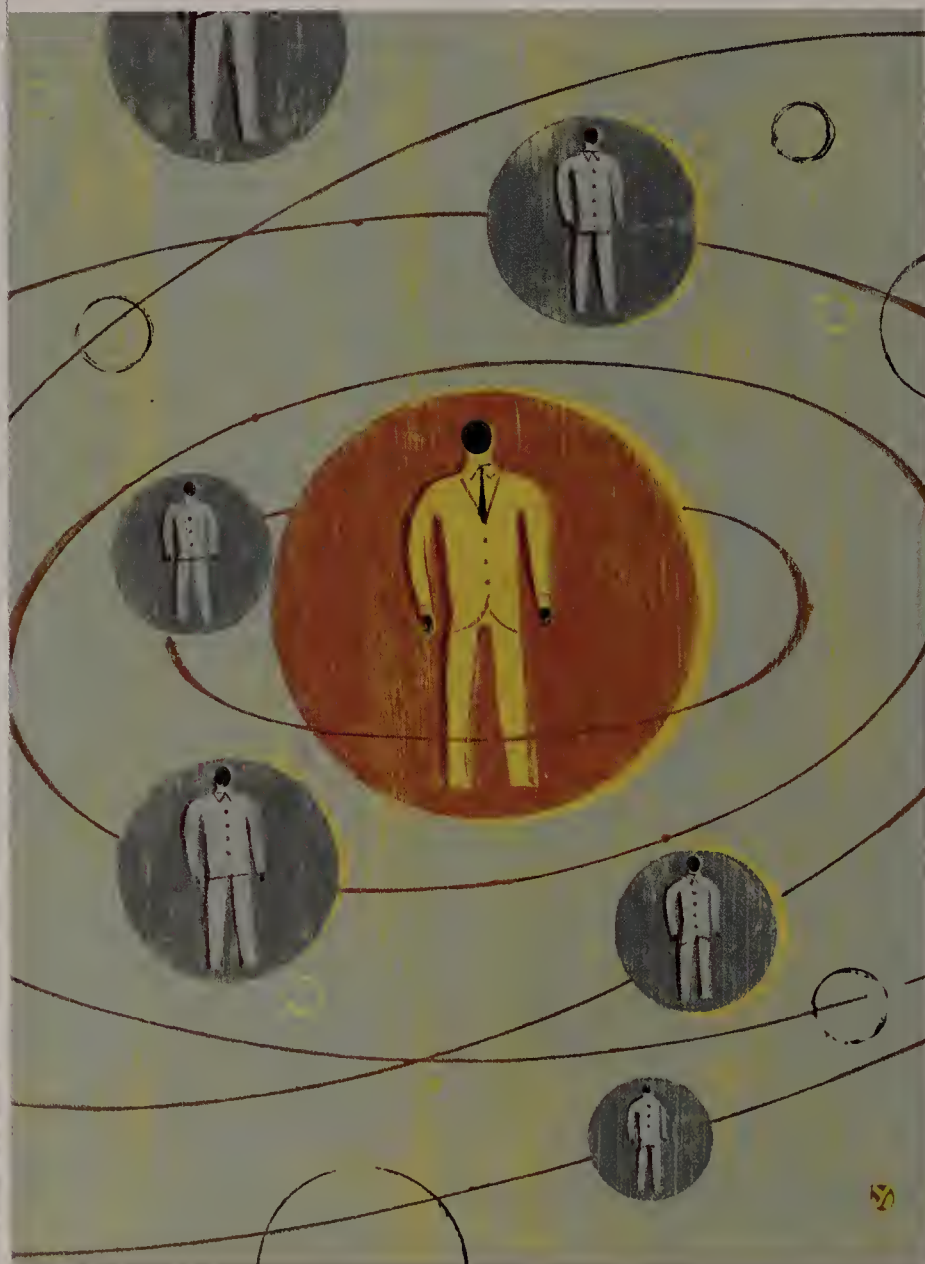
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The Pull of Persuasion

Smart CIOs create partnerships and alliances to carve out a powerful role for themselves and their IT department



You would think that the executive who consumes, on average, nearly 50 percent of the capital invested by businesses would have a lot of power. You would be wrong. CIOs are basically powerless and they know it. Yet some CIOs get a little cranky with their Rodney Dangerfield role and parlay themselves and their organizations into a power deficit.

How else to explain CIOs who lash out at business partners for trying new technologies, who create byzantine processes that block access to information and technology resources, or who seem to extort funding by hiding behind policies like Sox and mergers and refusing to articulate what comprises “keep the lights on” expenses?

Smart CIOs lead from the back by creating partnerships and alliances. Picture *Survivor* without all the dirt, bugs and voting, and you have a mental image of the skills required for success. I’m not a big fan of the reality television series, but I am impressed with CIOs who understand how to get things done through others and, in doing so, are able to create a powerful role for themselves, their organizations and technology.

First things first: Powerful CIOs get out of their offices and spend the majority of their time within the business and with their business partners. This is a principle known by many but acted on by few because most CIOs don’t know what to do when they leave the safety and comfort of their department. While it’s easy to identify whom you need to get closer to, it feels awkward to reach out and say, “I would love to spend more time getting to know you and your organization. How can we spend more together?”

I don’t have any magic pill here. I do suggest that you talk to



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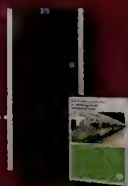
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two stakeholders on a one-on-one basis once a week and that you make sure to put another meeting on the calendar by the end of the discussion. This one will be to provide help to these stakeholders, solicit their feedback, attend a staff meeting, or travel to a field or customer site of theirs.

Powerful CIOs understand influence comes from understanding and empathizing with others. In the book *Social Intelligence*, Daniel Goleman writes, "Our experience of oneness—a sense of merging or sharing identities—increases whenever we take someone else's perspective, and it strengthens the more we see things from their point of view." To achieve that perspective, plan for each interaction by writing down five topics related to the people and their work so that

Smart CIOs lead from the back by creating partnerships and alliances.

the discussion provides insights as to who they are, how they think and work, and what they care about.

Powerful CIOs understand the importance of listening and inquiry before shifting to advocacy. The common rule in emotionally charged conversations is to offer the other parties two empathetic listening responses (reflecting the content and the words) before asking questions to uncover the rationale for their feelings, actions and conclusions. While it may feel much more efficient and powerful to say, "We should...," it's much more effective to ask, "How should...?" The goal is to fully understand the thought processes of others before offering your own recommendations.

Powerful CIOs understand that persuading and inspiring others starts with character and credibility that are established through personal interactions or, initially, conferred through a trusted third party. They understand the power of appropriate praise and doing unsolicited favors for others. They don't waste their time trying to win the day through hard sells and grandstanding. Instead, they build support for ideas behind the scenes through one-on-one meetings and lots of give and take. They know how to link their recommendations to the benefits and needs of others and communicate using stories and metaphors. Powerful CIOs have the courage to negotiate win-win outcomes because, through every action, they have expressed consideration for all parties.

It's easy to confuse leading from the back with following because of the amount of time spent listening and adjusting to the needs of others. The key difference between the two was best expressed by Eisenhower when he said, "Leadership is the art of getting someone else to do something you want because he wants to do it." Leading from the back is leadership at its finest. Done well, it fosters commitment based on the reward of a job well done.

Reader Q&A

What is your advice when efforts to reach out to a business partner fail? One business unit head at my company is always "too busy" to meet with me.

A: It sounds like you have gone above and beyond in your efforts to forge a relationship. First and foremost, make sure that his organization is satisfied with your day-to-day services. If issues exist, get them resolved. It's impossible to create relationships if operational credibility isn't in place. Next, focus on creating a great reputation with other, more cooperative business units. Ask those who have a relationship with this executive to praise your efforts. Try also to cultivate relationships and build credibility with his direct reports. Ask them for opportunities to get in front of their supervisor to review your joint accomplishments.

Q: Don't those who "lead from the back" run the risk of being perceived not as leaders but as followers?

A: Great leaders practice the philosophy that "We have two ears and one mouth so that we can listen twice as much as we speak." They use inquiry to understand others' perspectives and shift into advocacy when they have the information necessary to propose the path forward.

Q: Why counsel CIOs to use others to drive their agenda? Why not take an aggressive stance to position yourself as a leader within the organization?

A: Let me use an analogy to answer your question. My doctor can take a more aggressive stance to influence me to take better care of myself, but I am the one who

determines whether or not my behaviors change. The best way for my doctor to influence me is to understand my motivators. CIOs don't

Have a Leadership Question?

For more reader **QUESTIONS** and answers from **SUSAN CRAMM**, go online to www.cio.com/author/102853.

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own the "Three P's" of value creation—the processes, P&L and people—so they must use others to drive their agenda. Of course their agenda must be shared since those owning the Three P's determine the priority and success of the IT-enabled initiatives. The CIO can drive the IT agenda only if it serves the needs of those running the business. **CIO**

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. You can e-mail feedback to susan@valuedance.com.



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 **LOGICALIS**

The Declaration of Interdependence

You can't deny your employees the freedom to use consumer applications within the enterprise. Here's how to live with and profit from them.

BY BEN WORTHEN

DIGITAL CAMERAS DIDN'T CREEP UP ON THE DREES COMPANY as much as they pounced. Five years ago a lot of employees at the \$1.1 billion real estate company weren't even using computers. Today, those same employees are responsible for one of the company's more innovative uses of technology.

But at first, says Brian Clark, Drees's manager of data management, the company wouldn't support the devices. Technology that wasn't approved by the IT department was not supported in the workplace. But employees ignored the rules. "This was when cheap digital cameras were first coming onto the market," Clark recalls. People used them to take pictures of under-construction homes, upload the pictures to their work computers, and then e-mail them to out-of-state buyers, insurance brokers or contractors. Clark admits it was a great

Reader ROI

- :: Strategies for managing end users' personal technology
- :: Making the business case for adopting consumer applications



Dwain Wilcox, Millipore
VP of IT, says it's important
to define the support costs
for free consumer software in
order to accurately assess its
business case.

idea. It's a lot easier to show a contractor a picture of the place on the wall that needs fixing than to try to describe it on the phone. Soon, however, the behavior reached a tipping point, which was when Clark knew he had to fix it.

Every camera had its own proprietary software, and the IT department didn't have the resources to test every one to find out what it would do to its environment. When rogue cameras occasionally would appear, Clark made it clear that his department wouldn't help users with any technical problems. IT also tried to find a camera solution the company could use because the business benefits were undeniable. Finally, about a year ago, a user suggested that Drees use Picasa, a free, camera-agnostic photo management application from Google. Clark ran a few tests, determined that it didn't pose any risks and rolled it out. Picasa is now standard on every Drees computer.

Picasa is a free consumer application; a company using it doesn't have to pay for licenses, but it won't get any support from the vendor either. A recent survey by *CIO* magazine of 368 IT leaders found that 41 percent wouldn't even consider such an application for use in their enterprises. But Clark, like the majority of technology executives surveyed, sees it differently. "Our attitude has changed a lot," he says. "First, you can't dismiss Google anymore. They aren't some fly-by-night company." Second—and he has learned this from experience—using freely available software can have a huge ROI. "We don't teach people how to use it," he says. "But when they do, it allows us to leverage someone else's work at little to no cost. How can you not win in that situation?"

That question is confronting CIOs with increasing regularity. And more often than not, the people asking it are end users. Consumer technology is now better than corporate technology by a factor of 100, maybe even 1,000, says Stowe Boyd, a senior consultant with the Cutter Consortium. "It is significantly better, no matter how you measure innovation," he says. As information

CIOs have to think differently about what they need to be responsible for and which responsibilities they can share with users. The way to start is by identifying what is critical to protect the enterprise.

technology shifts from a tool used almost exclusively in the workplace to one used in every facet of life, users' expectations for what technology should be able to do are shifting as well.

But those expectations only go so far. Users care whether technology is easy to use or makes them more productive. They don't stop to think about how something fits into an enterprise computing environment. Corporate IT, on the other hand, has a responsibility to consider security, compliance and the impact an application or device has on the company's infrastructure. The latest consumer IT tool might need testing, management, monitoring and support. In other words, it isn't the no-brainer it may first appear to be.

It's these hidden issues that often lead IT to delay or ban consumer technology. And when this happens, IT risks appearing as

an inhibitor to innovation, a part of the company that users don't rely on as much as they bypass. Many CIOs feel this in their gut. Among respondents to our survey, two-thirds or more reported that employees at their companies either download programs, use instant messaging or participate in social networking sites (see chart on Page 43). But with the exception of instant messaging, fewer than half of the respondents officially support these applications.

Instead, users are getting this technology from the shadow IT department—a catch-all term for the applications and devices that are available on the Internet or from the local consumer electronics store (see below). Users turn to shadow IT when they need to make themselves more productive and they aren't getting the tools they need to do so from corporate IT. This, in turn, opens up new challenges for CIOs and IT departments, since users have not properly evaluated the impact of these technologies. But all is not lost. Shadow IT can be managed and even leveraged—if only one rethinks the role of IT as shifting from being the provider of technology to the facilitator of its use. Furthermore, CIOs must

What Is Shadow IT?

SHADOW I.T. REFERS TO technology that consumers can get on the Internet or at their neighborhood electronics store. These tools, which include Web-based e-mail, instant messaging, iPods, USB storage and more, are the tools people use in their nonwork lives. And now they are starting to use them in the workplace.

Think of these applications and

devices not just as a loose collection of tools that can be treated as one-offs, but as the product of a separate IT department staffed by individual users. The difference is simple: If all you have in your organization is a series of one-off user-driven projects, all you have to do is shut them down. But a shadow IT department is a force, and when it emerges, suddenly

IT's monopoly on technology is over.

That's the point we've reached. From now on IT will have to compete with the shadow IT department for every user. If a user doesn't get the technology he thinks he needs to do his job from you—or gets a solution that doesn't work as well as she wants—the user can get an alternative from the shadow IT department. —B.W.

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“If you are just going to sit around in your office and pontificate about security and technology, you will be in firefighting mode all day long.”

—ALAN YOUNG, CIO,
SOUTHERN UTE INDIAN TRIBE

concerns about security, compliance or manageability do win out over the potential business benefits, it is important to communicate to users exactly why that decision was made in terms that they understand.

“If you are just going to sit around in your office and pontificate about security and technology, you will be in firefighting mode all day long,” says Alan Young, CIO of the Southern Ute Indian Tribe, where he supports an oil and gas company, a casino, a tribal government and an investment fund, among other businesses. “You have to evolve.” Here’s what to do.

Share the Sandbox

The IT department used to control all technology. And among corporate IT staff, many still feel that users aren’t responsible enough to handle technology on their own. If you doubt this, search Slashdot.org for the term “luser.”

That’s one reason why corporate IT is often quick to dismiss technology projects initiated

by users. But technology encompasses too many categories for the modern IT department to keep up. CIOs have to start thinking differently about what they really need to be responsible for and which responsibilities they can share with users. The way to start is by identifying what is critical to protect the enterprise. One emerging strategy is to secure the network and not worry about client devices—until they connect with the network.

David Steinour, CIO of Furman University, had to learn how to secure a network while at the same time maintaining zero control over what it is used for. Once, several years ago, Steinour worked at a different school, where he limited access to peer-to-peer file-

look beyond simple ROI and efficiency measures to calculate the value of shadow IT, says Boyd. “Personal productivity is a part of it,” he says. “But it is also about feeling connected.”

To succeed in this new enterprise environment, CIOs must learn the art of compromise. They need to engage users in a constant dialogue about the pluses and minuses of new technologies and to concede that users can share responsibility for choosing and managing business applications.

It also means picking your battles, so that security and regulatory compliance and the desire to preserve the current environment don’t come at the expense of user productivity. And when

sharing networks. He thought he had good reasons: He was receiving complaints about copyright infringement from the music industry, and the traffic was eating up almost all his bandwidth. After Steinour limited access, the university president received complaints from parents and students. The complaints finally stopped when Steinour explained his rationale, but the experience taught him that he could not control everything users put on their computers or limit what they download. The faculty, for instance, had legitimate reasons for using file sharing.

Nevertheless, Steinour stakes his job on protecting the network. Before anyone at Furman can connect to the enterprise network, her computer has to undergo a scan and have its virus definitions updated. The first time a user connects, this takes about a half hour. The process is invisible thereafter. "There is no possible way we can police everything that goes on," says Steinour. "So I protect the institution, not the individual."

The same network-centric approach can work in a corporate environment. "I am a data socialist," says Young, exhibiting this new virtue. "I don't own the data. My customers own the data." Young has realized that he can't control everything that the businesses on the Ute reservation want to do with IT any better than he can predict them. For instance, the equity traders who work for the tribe's investment fund have to do all kinds of research; it would handicap them if Young blocked certain Internet sites or refused to let them use certain research tools. "I am open to having other forms of tech in our mix without being a snob about it," he says. "We have guys downloading data from FTP sites."

"I am more wide open today than I have ever been," he adds, but "it's not like I opened up port 80 and said have fun."

In fact, Young has compensated for loosening the control on what end users do by tightening his control on the part of IT that no one else can touch without his permission: the corporate network. "I know everything that is happening on my network at all times," he says matter-of-factly. He uses a variety of applications, including Websense content filtering software and intrusion detection and monitoring tools from Cisco, to gain real-time insight into everything that is happening. If he finds something on the network that shouldn't be there, he acts. It's a way of ensuring security without inhibiting users. And in those rare instances where Young does have to restrict an activity, it is as part of a compromise. For example, he doesn't allow people to send encrypted JPEG and GIF files because virus prevention software can't detect viruses embedded in them. But anyone who wants to send an image can send it unencrypted, or send a link to the website where the image resides.

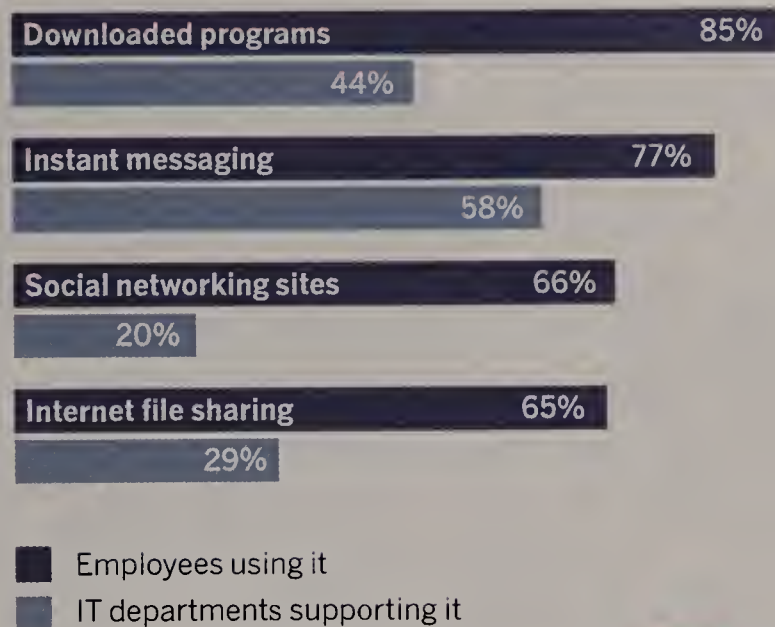
Know the Business Case

One of the challenges with shadow IT systems is that they work great for the users—they are usually the most customized solution a user could find. But an application that works for an individual user may not work for the company. A shadow system may not scale, it may open up a hole in the firewall or it may conflict with another system the company runs. Corporate IT departments normally test for compatibility with the existing environment and calculate operating costs before deploying any new system; for

Shadow IT Is Pervasive

IT leaders acknowledge most employees use unsupported technology

TYPE OF TECHNOLOGY



CIO RESEARCH

these reasons, nominally free software might still cost thousands of dollars to deploy.

"Free isn't always free," explains Dwain Wilcox, vice president of information technology for Millipore, a \$1.2 billion biotech company. "Even though it is free and enhances productivity, we have to go find out what the hidden issues are." This is why Drees at first didn't let people bring their own cameras to work. "Supporting one person with one camera is not a problem," says Clark. "Supporting 200 people with 200 cameras is."

Finding a product that works as a corporate standard can solve such problems, however. "With one standard [application], supporting 200 cameras is suddenly doable again," says Clark about his company's decision to deploy Google's Picasa. Like Clark and Wilcox, 30 percent of the respondents to the CIO survey study the business case for a consumer IT project to see if it can be mainstreamed.

Identifying a scalable version of a consumer technology to test and deploy across the enterprise is no different from what CIOs have always done with e-mail and other enterprise systems. "We standardized on BlackBerrys early on," says Millipore's Wilcox, whose employees use the devices not only for e-mail but also to access corporate data on Salesforce.com.

Millipore used to support a variety of devices. "We were finding that setting up new users took a really long time, an hour or two," says Wilcox. "Imagine doing that across the enterprise—it increases the amount of work for IT exponentially." But once the company adopted BlackBerrys for everyone, the work became manageable, because the IT department had to learn only once how to set up a new user.

There were trade-offs, of course. The people who used Treos or Windows devices were upset that they had to switch. But at the end of the day there wasn't really anything that they could do on those devices that they couldn't do with a BlackBerry. Plus, Wilcox was able to sweeten the deal with access to Salesforce.com. So in the end, Wilcox says, they came around. Again, it was a good compromise.

Pick Your Battles

As our survey revealed, most companies have shadow IT systems. Yours probably does too. But you know you don't have the resources to stay on top of everything. That's why it's important to pick your battles. For example, when data protection is a concern, pay close attention to the parts of your business where the most important information is.

"In our case that's the R&D organization," says Wilcox. "You really don't want those guys storing their research data using a free software-as-a-service tool. But the sales guys using a collaboration tool? That's a different story." If a rival found out a new formula that Millipore was working on, that would be a big problem. But a few sales leads? Not the end of the world.

Furman University's Steinour puts it this way: You need to evaluate risk versus cost. Not from a traditional ROI perspective, necessarily, but from a resource allocation standpoint. You can't protect everything all the time. "For me it comes down to three

The interaction between end users and IT staff is a chance to advertise corporate IT—not just the services it provides but also its openness to new ideas.

priorities," he says. "Protect the institution, protect the staff, and protect the network. I do everything I can to provide security for our data and I have policies and rules to protect the institution."

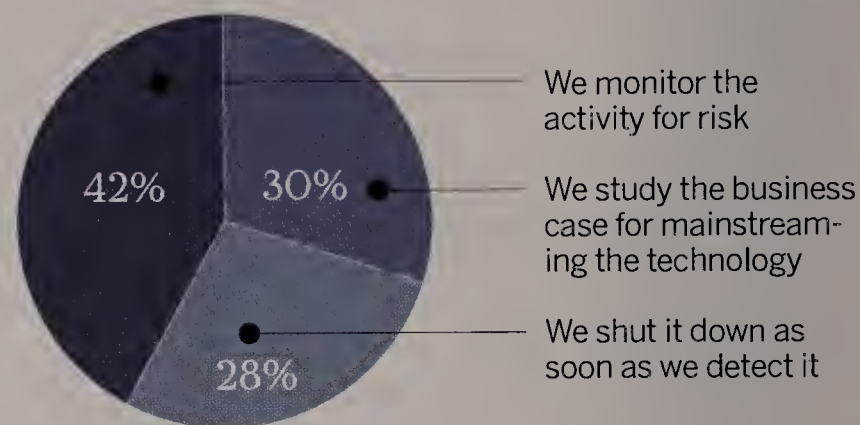
One thing that he allows, despite the potential security risk, is instant messaging, just like 58 percent of the companies CIO surveyed. The students use it—there is no way to prevent that—but so does the school's staff, who use a sectioned-off part of the network and have usage guidelines more like those of the average company. "We standardize on our scheduling and e-mail, but when we get down to how people want to communicate, we do not enforce policy."

The reason Steinour has decided to be flexible with IM is that almost nothing peo-

If You Can't Win, Don't Fight

Most companies tolerate shadow IT

How IT departments say they approach unsupported technology



61% of IT organizations allow end users to find and use their own software applications. But most want users to ask first.

CIO RESEARCH

ple use IM for is sensitive. People might use it to ask a colleague if she is around before walking across campus to her office. Or they may use it for personal reasons, to tell a spouse when they'll be home for dinner. Thus, says Steinour, "We will never consider looking at it unless there is something that happens on that port and we have a network security incident."

Be Human

Whenever IT equips a user with a laptop or a BlackBerry, it comes with an implicit message: You can work from anywhere. In most cases that message gets extrapolated to, You are expected to work from anywhere, be it home or your hotel while you are traveling. In fact, the barrier between the professional and the personal has all but disappeared for many workers. A study of more than 200,000 workers conducted by the employee research firm ISR found that between 2002 and 2005, the number of workers who said that their jobs seriously interfere with their private lives rose from 24 percent to 34 percent. So why shouldn't employees be able to bring some elements of their personal life into the workplace? That's a question CIOs need to start asking.

"We realize the reality of the workplace and we want to make it employee friendly," says Brent Holladay, chief deputy of information resources for the Lake County (Fla.) Clerk of Courts. "In government we can't use pay as the only incentive." Letting workers use personal technology is one way to be flexible. Holladay has decided, for example, to let people listen to music on their computers, provided that they show their managers

More About Shadow IT

To learn more about consumer IT in the workplace, read **USERS WHO KNOW TOO MUCH AND THE CIOs WHO FEAR THEM** at www.cio.com/article/28821.

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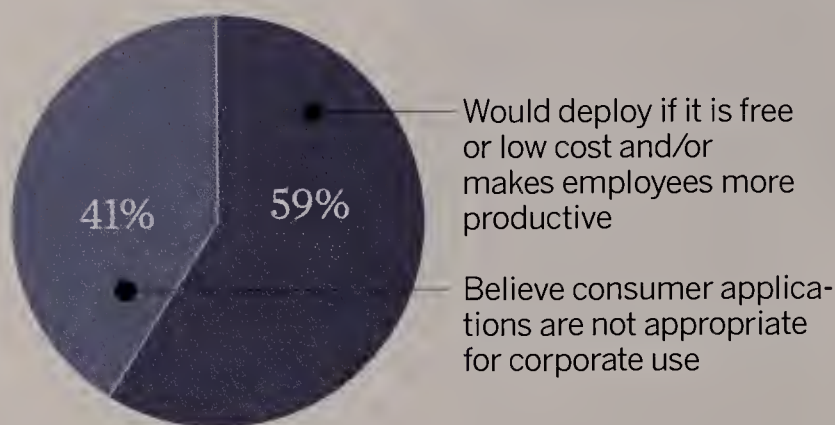
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The most important criteria for choosing applications for your company

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2	Reliability
3	Usability/ease of use
4	Manageability
5	Price
6	Scalability

CIO RESEARCH

they can still get their work done.

Employees are discouraged from bringing iPods into the workplace and from listening to music in the office at Millipore. That said, "We realize from time to time people will have music files on their laptops while traveling or whatnot," says Wilcox. And he lets them, because he doesn't want work to encroach on people's lives anymore than it does. But when Millipore backs up its files every night, sometimes the company ends up backing up someone's MP3s. "We try to exclude that stuff whenever we can," he says. "But it happens, and it is a bandwidth hog." However, he thinks that's a small price to pay for happier employees.

Talk to Users

Pop quiz: Do you remember every form you signed when you joined your company and what policies you agreed to follow? Most users don't know either. That's why relying on written policies is the worst way to influence user behavior. There are some shadow IT systems that CIOs absolutely have to shut down or prevent from being installed in the first place. But counting on a memo to make that happen is a mistake.

"I don't like to have a lot of policies," says Wilcox. "There are certain ones you have to have to CYA, but we don't have tons and tons of them." For example, Millipore lets employees store personal information on their work computers, and there's a written policy that says the company owns any information on a company laptop. But he usually "relies on verbal communication with the users, starting at the top," Wilcox says.

"Most managers, when you talk to them, they know you can't do things one-off," he says. "In this day and age, protection and privacy of info is vitally important. And they know that." In order to make them understand what IT is going through, he tries to put policies into terms that they will understand, drawing on similarities between what the company goes through and what users experience in their own life with their own data.

"Are you sure that [the shadow IT project] is trusted?" Wilcox asks users. "Would you be concerned if it was your personal information?" It's also possible to draw on past experience. "We've had just enough instances where something happened that wasn't serious but could have been," says Lake County's Holladay.

His office has had to deal with everything from viruses that almost shut the office down, to users who didn't lock their computers, potentially allowing anyone to access hugely secure court records. In each case the users knew they had done something wrong and that it could have been much worse. Call it the guilt approach, but Holladay says that people listen when you explain the risks of a shadow IT system in terms that they can relate to personally.

In one case Holladay encouraged people to install their own screen savers, part of his strategy to create a friendlier workplace. But people started sharing them with each other, which was a copyright violation. Holladay applied his standard test—how would he feel if the local newspaper wrote a story about what was going on? He imagined the headline, "Copyright Violations Run Rampant at County Clerk's Office," and used it as the rationale to explain why he had to outlaw the practice.

The ability to communicate well is the key to keeping dangerous shadow IT projects from popping up. The responsibility doesn't fall just to the CIO but to the entire IT staff. And it requires a conscious effort. "Any time one of my staff is out at a desktop, they are communicating our policy," says the Southern Ute's Young. "That is the form of communication that stays forefront in the mind of the user and my staff."

That interaction is a chance to advertise corporate IT—not just the services it provides but also its openness to new ideas. And at the end of the day, whether IT is perceived as open and helpful could be the difference between having to compete with a shadow IT department or not.

Clark believes the defining characteristic of a company that has a shadow IT problem "is if the users have stopped bringing ideas to you. Do they just assume you will say no? In any good company users are going to be bringing ideas constantly." **CIO**

E-mail feedback on this article to Executive Editor Elana Varon at evaron@cio.com.



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DIVIDE CONQUER

BY CHRISTOPHER KOCH

IT has two main jobs: Designing technology strategy and keeping the trains running. CIOs are dividing their staffs to do both well.

Reader ROI

- ∴ Why IT departments are being split
- ∴ How to divide up strategic and tactical work
- ∴ How to evaluate the long-term payback of dividing supply from demand

IT is splitting up. It's not petty squabbling that's causing the breakup. No, this is a sign of maturity. CIOs in larger organizations are dividing their staffs into two major groups: one that negotiates with the business on IT strategy and IT project choices and manages the delivery of those projects (among other management consulting-type duties), and a second group that manages the infrastructure and delivers new applications (among other traditional tactical IT duties).

This trend of materially distinguishing demand from supply in IT is a grassroots phenomenon, rather than a coordinated response to consultants or guru-propagated wisdom, according to two McKinsey consultants.

"We were at a gathering of West Coast CIOs in 2006 talking about this and everybody looked around the room and said, 'Hey, we're actually doing this. We actually thought we were doing this on our own,'" says Diogo Rau, a McKinsey consultant. "People had different kinds of names for it: account managers, or relationship managers or business process owners. But somehow all these organizations were independently stumbling upon the idea of this new function whose role was to develop or to manage demand."

We recently sat down with Rau and his colleague, David Mark, a director for McKinsey, to discuss this trend further.



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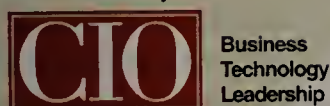
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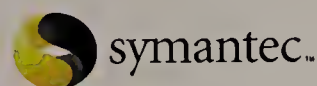
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Splitting supply from demand helps with planning because you gain better clarity into what's being demanded, what's being supplied, and how well the supply side is functioning and interacting with the demand side. —DAVID MARK, MCKINSEY



CIO: Why must the management of IT demand be split off from supply?

DAVID MARK: This is a part of a 10- to 15-year trend that we're seeing. A lot of this started with the centralization of infrastructure services. Many companies have gone to a utility-type model for infrastructure and have been formalizing chargeback mechanisms. And that goes all the way back to the mainframe era.

The difference today is that you have the emergence of business processes. And as companies have tried to integrate business processes across different units and functions, we're starting to see the same discipline that was applied to the lower level of the technology stack being applied to application development and business process. The split between demand and supply is being driven by a desire to get better economics or responsiveness out of resources that are shared.

What are the roles and goals of the demand unit?

DIOGO RAU: The first role the demand group plays emerges in the funding stage of projects. It focuses on portfolio management—helping decide what projects should be in your portfolio and making sure that you're getting the maximum value out of them.

The second role comes into play during the software development lifecycle, where the demand unit is acting as the business's expert overseeing the supply organization as it builds software. The demand unit represents the business's interests, much like a general contractor oversees the construction of a house.

Then there's a third role around vendor management. So, the demand unit is not only managing project delivery, but it may be negotiating contracts with outside providers such as outsourcers and contract developers.

What about the supply organization?

MARK: The supply organization is where you will perform many of the traditional IT services such as the technical design, building, testing and deployment of applications. This is where all of your application developers are living, for example. In terms of structure, sometimes we find that the supply organization is a centralized group that serves the entire organization. In other cases, especially in large companies with diverse business units, it is [replicated across the organization to serve] specific business units. Regardless, it's a good idea to separate demand and supply, even when the capabilities are not shared across multiple business units.

Let's focus on the demand organization for a minute. When business units each have their own demand organizations, who should control them, IT or the business?

RAU: Let me make an analogy: The finance function often has controllers embedded within the business units. If the controllers have a solid line into the CFO, they can discharge their fiduciary responsibilities to the corporation overall while also helping their business units. In general, if you follow this same approach with IT, you can have these demand organizations report solid-line into the CIO and dotted-line to the business units and help make sure that no one is overspending on projects. In this way, the demand organization has some real power to control the budget.

MARK: You'd need a fair degree of maturity to have the dotted line be to the IT organization rather than to the business unit. Theoretically, once the demand and supply organizations are up and running, and the governance processes are mature and stable, you can imagine that eventually flipping around to consisting of a heavier tie to the business and a dotted line to the IT organization. But I don't think we've

seen that anywhere yet. And there's a risk in that scenario, in which the relationship managers in the demand group may not necessarily have the kind of backbone they need. For example, they may not feel comfortable telling their business unit, "Hey, we should use this system that already exists in another business unit and extend it." They may become more like order takers for their own business.

How about this scenario? Given that CIOs constantly complain about their huge project backloads, wouldn't the demand units eventually get frustrated and say, "Forget it. I'm going to go outside and get someone else to do this." Then the credibility of your supply organization—and by extension, IT in general—will suffer, won't it?

MARK: If anything, splitting supply from demand helps with the overall planning because you gain more transparency and better clarity into what's being demanded, what's being supplied, and how well the supply side is functioning and interacting with the demand side.

But, of course, if the performance isn't there, it will become more transparent under the split that we're talking about, and it will highlight the issue.

RAU: If you can build this collection of demand organizations that have a strong value system and really work closely together, they should be able to make decisions that are in the best interest of the organization as a whole.

You say something revolutionary when you argue that IT should unequivocally own business process. What self-respecting businessperson is going to agree to that?

RAU: We do really see this trend that ownership of business process has been moving from something traditionally inside the COO organization, or other parts of the

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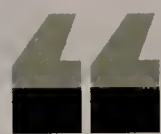


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Ownership of business process has been moving into IT. Businesspeople are tired of their processes being broken and their IT not working right. —DIOGO RAU, MCKINSEY



organization, into IT. Businesspeople are tired of their processes being broken and their IT not working right.

I often hear businesspeople say, “I’m the one who bought the SAP system, and I’m the one who’ll determine how it’s configured.” I sense a lot of reluctance on the part of the business—at least those that really care about IT—to give up the specification, or requirements, phase of IT.

RAU: We get a sense that there are certain parts of the workflow that the business may want to retain, but there are plenty of parts that they want to get rid of. And they don’t necessarily feel like they need to own the entire process end to end. I think this has been a huge problem for many IT organizations. Business process is a little bit of a red-headed stepchild. I mean, nobody knows exactly where or how to fit it into the governance model, or the development model, and it has tended to shift around a little bit in terms of ownership. And I think it’s a root cause of a lot of pain between business and IT.

MARK: System specification and implementation planning in business process are getting so welded together that you need a capability that is at a fairly detailed level to specify the business process, and then sync it into the technology plans that are being developed. So I think if you’re the head of sales and marketing, you’re clearly going to be involved in spec’ing out what your business imperatives are, what your high-level process looks like and how that marries to your objectives. But then there’s the translation of that into the specific tech-

nical architecture, the components and the requirements that the business is willing to part with. I think putting it in the demand organization is actually a pretty attractive idea. It gives you sort of a natural home to weld those pieces together.

It sounds like what you’re really talking about is creating an organization specifically for the requirements phase of traditional software projects. Why can’t IT just do that without splitting itself up?

MARK: I think you’re absolutely right that a big part of this is requirements definition, which is a piece that’s sorely needed. But there are at least two other skills that we’re talking about here. One is portfolio management and acting with fiduciary responsibility to the entire organization to make sure that your IT dollars are well spent. And then there’s another piece around vendor management.

How does enterprise architecture and SOA fit into this? Is this a job for the demand group as well?

MARK: My bias would be to put that inside the supply organization. The demand organization certainly would know all about SOA, but there is probably no need to communicate that to the business or for the demand group to own it itself.

What’s the hard ROI of doing this?

RAU: The benefits are very hard to quantify, but they are big. If you look at portfolio management, what’s the value of investing only in projects that have the best benefits? You are essentially upping the ROI on *all* of your individual projects, and not funding some projects that might have cost you a lot of money.

Secondly, when you look at the requirements definition piece, the demand organization is really rationalizing the demand at a requirement level. They look at individ-

ual features and ask, “Do you really need all of that?” Again, the benefits are hard to quantify, but they’re there.

And then if you consider vendor management, you’d almost certainly benefit from having someone who acts as a better manager of your supply organizations.

OK. Say a CIO wants to do this. What are some key metrics that he should keep in mind as he goes through this transition?

MARK: The metrics aren’t particularly new, but an important one is the percentage of projects that have good business cases behind them and well-defined methodologies. Another is the on-time and on-budget performance of the project delivery organizations. Another one is comparing the ROI you predicted at the beginning of the initiative to what you actually receive.

Is this something every IT organization should consider doing?

RAU: It’s not a foregone conclusion that you need to do this in all cases. If, for example, your IT strategy is to be super agile and develop new products as quickly as possible, you might have a structure that is much more decentralized. Or if you are focusing purely on cost, you might want to go to an organization where everything’s centralized into one group. And in very small companies, you probably wouldn’t want to go to this kind of a structure. You might set up mechanisms that mirror it within an organization, but you really wouldn’t want to create two separate groups.

But we do think that splitting demand from supply helps to improve business delivery of IT. It’s like a tidal force. You can swim against it, but ultimately the vast majority of companies are going to end up with much more formal relationships between demand and supply. **CIO**

Doing the Split

Another divide in the modern IT department is the split between technology specialists and business generalists. For more on this debate, read Chuck Martin on **SPECIALISTS VS. GENERALISTS** at www.cio.com/article/102352.

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CIO EXECUTIVE VIEWPOINT

Maximizing Project Management

Upgrading Yesterday's Processes with Today's Tools for True Maximization

Patrick McGuire

President, Surrex Project Solutions

Patrick McGuire is a 20-year IT veteran. Rising through the ranks as an engineer, developer, database administrator and project manager, he patented a network card and founded and sold several software companies, including Fast Track Solutions. After becoming a CIO, McGuire consistently delivered on key technical strategies and critical projects that resulted in profitable business growth. By delivering on several key strategic projects, he helped his last company catapult from a \$35 million to a \$180 million business in just three years.

Project Management Maximization (PMM) helps executives and project teams think about old processes in new, more effective ways. "Upgrading yesterday's project management processes with today's new thinking and technology yields amazing results," says McGuire. "We have seen PMM dramatically increase project efficiency while reducing project risk." Read on, as McGuire shares his insight on this topic.

What is Project Management Maximization?

PMM involves taking outdated processes and transforming them with newer collaboration, coordination and communication frameworks managed by the latest technology. It's a new way to solve old problems using new processes, better tools and fresh thinking to create profound project efficiencies while reducing risks.

"When it comes to hard dollar benefits of PMM, 20 percent gains are the norm—that's \$200,000 on a million-dollar project!"

How can PMM create project efficiencies?

PMM starts with complete project visibility to allow the entire team to see the project "road map" and not stray from the given path. It then eliminates the artificial time lags and wasted time spent on administrative work. Most companies are still using old-technology spreadsheets, which are essentially non-real-time data, on shared drives housing status reports, project assignments, and issues logs. This information is stale, over-administrated, non-collaborative, and creates a limited project picture.

How can PMM help mitigate project risk?

Risks start at the technical level, but by the time they reach upper management they have been reduced to a single watered-down sentence. Proper PMM tools allow risks, at any level, to be rolled up into a dashboard and linked back to the raw data so anyone can see the root cause. Risk are scored, assigned and provided action plans, which are communicated to all levels automatically (this also helps to mitigate Sarbanes-Oxley issues).

So why isn't everyone doing PMM?

First, PMM requires change and change evokes fear—something most organizations prefer to avoid. The most difficult obstacle to overcome is the fear of complete transparency, where everyone can see what is going on—warts and all. Transparency actually creates a unique

positive synergy rather than finger-pointing and public executions. Also, when CIOs think they are doing a good job, they're not as likely to be looking for a more efficient solution. As Jim Collins says, "Good is the Enemy of Great." Lastly, it's rare to find a PMM partner who really understands and has implemented PMM processes.

What are the measurable benefits of optimization?

When it comes to hard-dollar benefits, 20 percent gains are the norm—that's \$200,000 on a million-dollar project! There are soft benefits, too. Allowing



tools to do most of the administrative work unburdens the project team. Eliminating artificial time lags allows issues to be solved in real time so risks are minimized sooner. CIOs have complete visibility into the project and answers for the board room. PMM creates a great project ROI.

So how does a company acquire this expertise?

CIOs need to start with a provider that understands their organization's needs and culture. Then, apply this knowledge to create collaborative environments, proper communication systems and coordinate the right set of processes utilizing the latest tools and technology concepts. Cookie-cutter processes from the '80s don't work. The result transforms project resources into a far more efficient and effective team.

For More Information: Check out this white paper, "The New Project Management 2.0—Project Management Maximization", at www.cio.com/whitepapers/surrexprojectsolutions



THE SECRETS OF C-SUITE SUCCESS

Do you have what it takes to be a strategic CIO? A CEO? Find out.

BY CARRIE MATHEWS

DO YOU KNOW YOUR EXECUTIVE QUOTIENT (EQ)? By figuring your EQ, you can determine how well you're positioned to be the strategy-oriented CIO that businesses are demanding.

Your EQ can be measured across a set of executive leadership competencies (see "Competencies Defined," Page 58) that are essential for any well-rounded C-level executive—including IT leaders who want to move beyond the limits of Function Head and its focus on operations, alignment and order-taking. It's also a success indicator for CIOs who are taking on formal or informal responsibilities in non-IT aspects of the business or moving up to the CEO role. (To measure yourself, go to www.cioexecutivecouncil.com/futurestatecio.)

Your CEO sets the benchmark for performance across all executive competencies. The good news is that the best CIOs stand up well against their bosses and even outperform them in many competencies. The bad news is that they underperform significantly in competencies unique to strategic business leadership. This gap defines the development goals IT lead-

Reader ROI

- :: Competencies CIOs need to develop
- :: Where CIOs fall short
- :: What CEOs expect from CIOs

ers need to set in order to advance their individual EQ, their careers and the CIO profession as a whole.

Contemplating Competencies

Helping the CIO profession fulfill its desired and necessary strategic role is the reason the CIO Executive Council developed its Future-State CIO program, of which the EQ competency assessment is the heart. The Council partnered with global executive recruiting company Egon Zehnder International to adapt its competencies and assessment model to gauge CIO EQ. In 40 years of assessing executive talent, Egon Zehnder chose this set of competencies because of its predictive value in identifying top-performing executives. These are the behaviors that differentiate good executives from great executives, says Stephen Kelner, global knowledge leader of Egon Zehnder's talent management and management appraisal practice group.

Kelner describes the competency of Market Knowledge in

detail to illustrate the range in performance levels. The Market Knowledge score indicates how well an executive understands the marketplace, including customers, suppliers, competitors and regulators. "Level 1 CIOs are doing their basic job," says Kelner. "As they move to Level 2, CIOs can describe what the industry is doing and the basic forces of the market, including typical customers and obvious competitors." At the higher levels, CIOs know their market well enough to spot, anticipate and capitalize on trends. The highest performers make an impact on the marketplace by creating new businesses or new products through their understanding of technology, customer needs and market trends. Unfortunately, Market Knowledge, according to Kelner's six years of accumulated data, is, compared to CEOs' competencies, a weak spot for CIOs.

CIOs vs. CEOs

Examining the competency performance data based on interviews and 360-degree assessments of 25,000 executives in

Competencies Defined From business strategist to functional leader

Market Knowledge

Understanding the market in which a business operates, including the competition, the suppliers, the customer base and the regulatory environment.

- » **High performers** develop deep market knowledge that enables them to see how to transform the industry landscape.

External Customer Focus

Serving and building value-added relationships with customers or clients.

- » **High performers** cultivate deep external customer relationships and are dedicated to creating enduring mutual benefit.

Commercial Orientation

Identifying and moving toward business opportunities, seizing chances to increase profit and revenue.

- » **High performers** change the rules of the game, creating sustainable competitive advantage.

Strategic Orientation

The ability to think long-term, holistically and outside one's own area. It involves three dimensions: business awareness, critical analysis and integration of information, and the ability to develop an action plan.

- » **High performers** develop cross-enterprise strategies in complex environments.

Change Leadership

Transforming and aligning an organization to drive for improvement in a new direction. This is about energizing a whole organization.

- » **High performers** create a culture of change and coordinate it throughout complex organizations.

Collaboration and Influence

Working effectively with and influencing those outside your function area to effect a positive impact on business performance.

- » **High performers** forge transformational partnerships.

Results Orientation

Focusing on improving business results.

- » **High performers** transform processes and create new business models.

People and Organizational Development

Developing the long-term capabilities of others and the organization as a whole, and finding satisfaction in influencing or even transforming the lives and careers of others.

- » **High performers** systematically build the overall bench strength of the organization.

Team Leadership

Focusing, aligning and building effective groups in one's immediate organization. This could apply to a virtual project team or a cross-functional team, whether there is a formal leader or not.

- » **High performers** build self-managing teams that function well, with high morale, in complex situations.

Function Expertise

Leading in one's own function area or unit to achieve operational excellence.

- » **High performers** drive the business, bringing function expertise in only when needed. They have freed themselves up from time-consuming hands-on management. —C.M.



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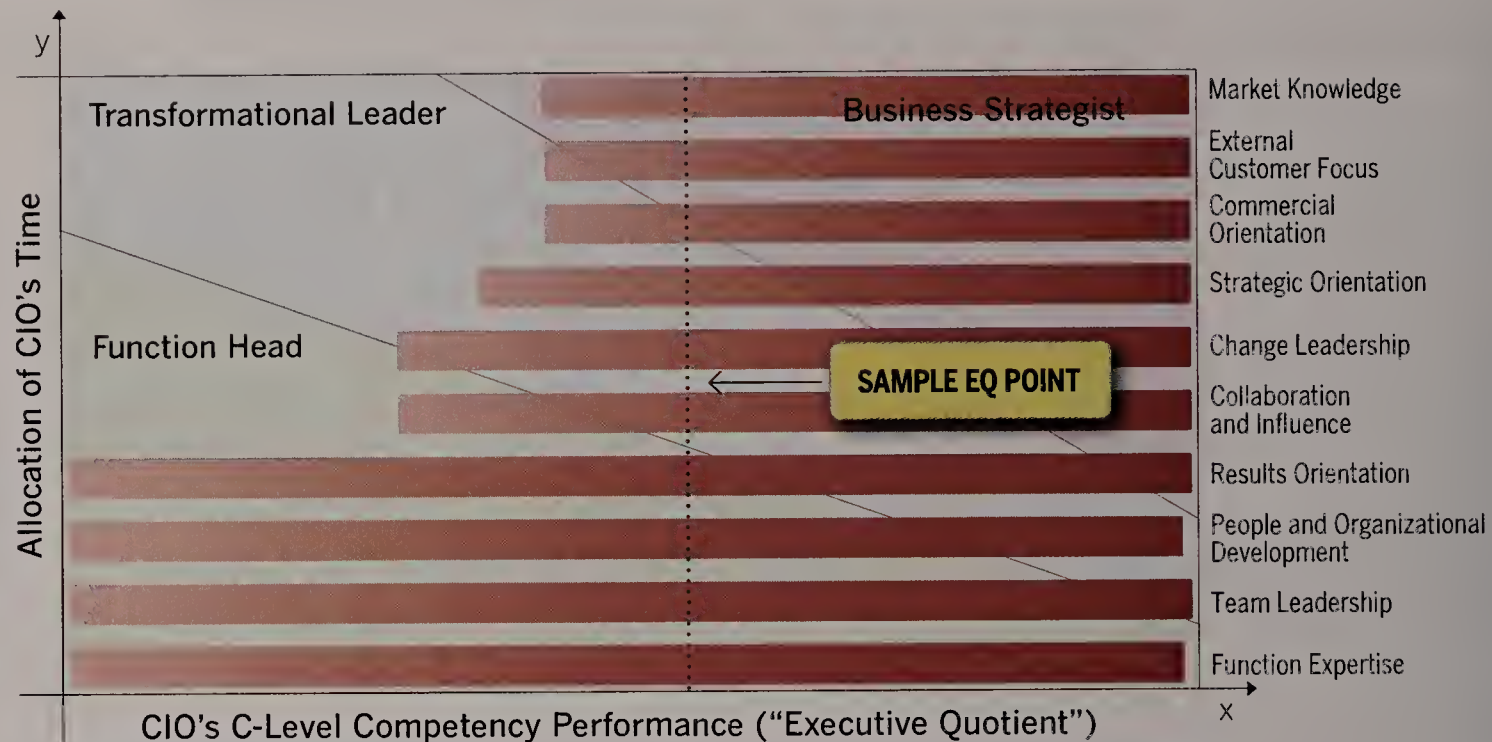
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Future-State CIO Model: Applied Competencies



This Future-State CIO model shows which individual competencies are most relevant to which aspects of the CIO role (Function Head, focused on operational excellence; Transformational Leader, focused on business processes, change and alignment; and Business Strategist, focused on driving innovation for competitive advantage). Performance levels in each competency grow from left to right on the x-axis (indicated by darkening of the red competency bars). At the far right of the model—the future-state CIO zone—performance is at its peak, and the CIO is thus able to spend the majority of his focus on the business strategist aspect of the role.

SOURCE: CIO Executive Council

the Egon Zehnder database, we find:

- Outstanding CIOs (those ranked in top 15th percentile) score highest in Results Orientation, Strategic Orientation, Change Leadership and Customer Focus.
- Outstanding CIOs perform significantly better than average CIOs in all competencies except for People and Organizational Development, where they are equivalent.
- People and Organizational Development scores are relatively low for all types of executives assessed, particularly CFOs.
- Outstanding CIO scores slightly surpass good CEO scores on most competencies.
- Outstanding CEOs—the most well-rounded strategic leaders—perform significantly better than outstanding CIOs only in Market Knowledge and External Customer Focus. (See “Competency Performance Benchmarks,” Page 62.)

How to Improve Your EQ

CIOs who want to devote more of their time and energy to driving business strategy and innovation should focus on developing and leveraging the three competencies most particular to the business strategist: Market Knowledge, Strategic Orientation and Commercial Orientation. (See the “Future-State CIO Model,” above, for more on how each competency maps to three aspects of the CIO role: Function Head, Trans-

formational Leader and Business Strategist.) However, even to get a chance to be a business strategist, CIOs must be strong in foundational competencies such as Change Leadership, Collaboration and Influence, and Function Expertise. Without these, a CIO is unlikely to get a seat at the strategy table, and may in reality be a CIO only in title.

Kerrie Hoffman, Johnson & Johnson Consumer Group's Global Supply Chain CIO, wasn't surprised by the relatively low scores for CIOs in Market Knowledge and External Customer Focus. Hoffman rose through the sales ranks of Johnson & Johnson before joining the IT department and becoming a CIO. She knows how important the market and customers are to a business. But, as CIO, she finds she has to make a concerted effort to focus on these areas. “The day-to-day job of a CIO doesn't really require you to spend time doing customer and market visits, but it *should* require it,” says Hoffman.

Hoffman is leading an integrated Operations/IT effort to formulate and execute business strategy for emerging markets in areas of the Asia-Pacific region, where its products have been typically sold in mom-and-pop stores. Hoffman travels frequently to the region to size up the market. “Before I leave for these visits, I do my homework and get an overview of the specific business segment and market I'm going to that day. That way, I can really understand their challenges and

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Competency Performance Benchmarks

Talent assessment and recruitment firm Egon Zehnder International assessed 25,000 executives on C-level competencies, ranking performance levels in each from 1 to 7, with 7 being highest performance.

Outstanding CIOs perform significantly better than average CIOs in all competencies except for People and Organizational Development, which is relatively low for all types of executives assessed.

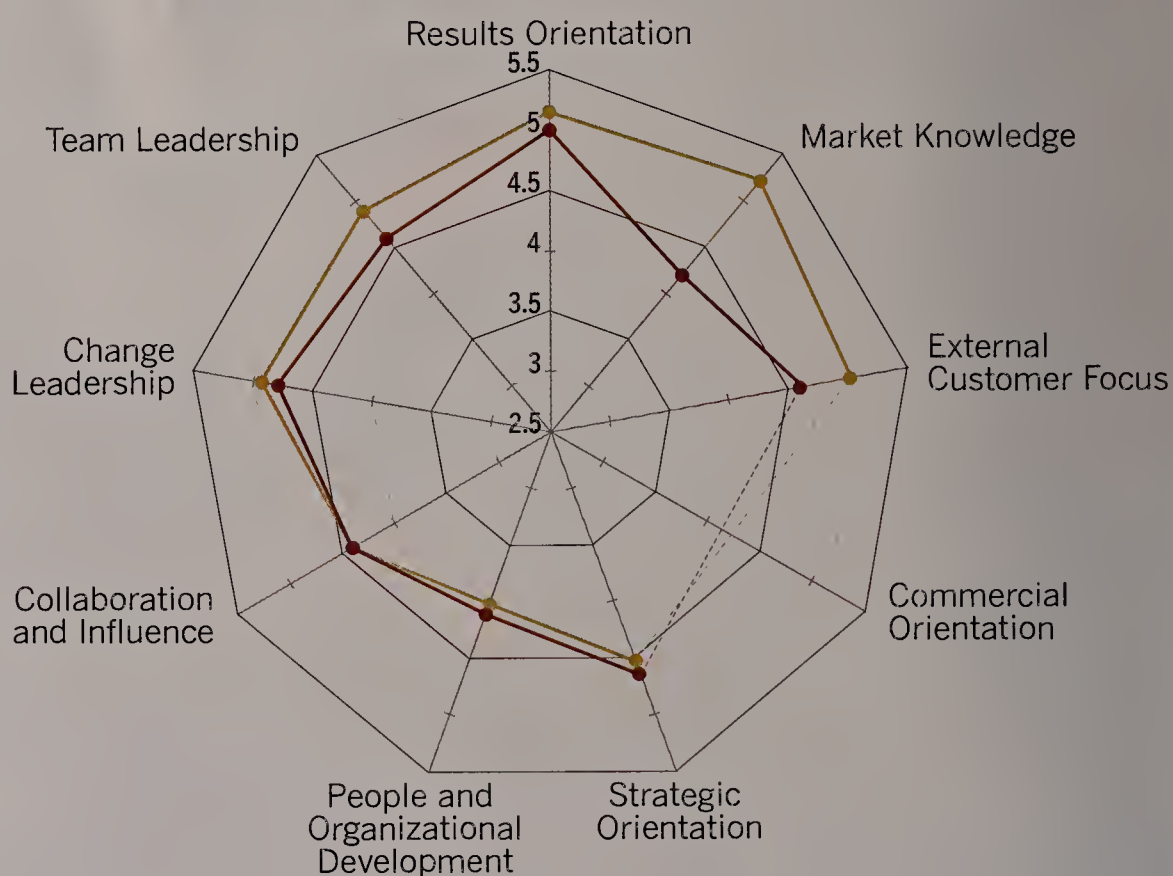
Outstanding CEOs perform significantly better than outstanding CIOs only in Market Knowledge and External Customer Focus.

Function Expertise performance is assumed to be high for any leader reaching the C level and is therefore not benchmarked. Commercial Orientation does not yet have adequate data for benchmarking.

Average CIOs vs. Outstanding CIOs



Outstanding CIOs vs. Outstanding CEOs



- Outstanding CIOs (Average scores of CIOs in the top 15th percentile)
- Average CIOs
- Outstanding CEOs

SOURCE: CIO Executive Council



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“The day-to-day job of a CIO doesn’t really require you to spend time doing customer and market visits, but it **should** require it.”

—KERRIE HOFFMAN, CIO, JOHNSON & JOHNSON’S GLOBAL SUPPLY CHAIN

the technology and business capabilities they need. My ultimate goal is have a rich and collaborative conversation with customers that takes us in a new direction—to really change the game,” Hoffman says.

CEOs, who often rise from the sales ranks, have an intuitive customer focus and often form close relationships with key customers. Conversely, in most industries CIOs concentrate on internal stakeholders and have not had much need to interact with external customers. An exception is George Chappelle, senior vice president and CIO at Sara Lee Foods. He credits his external customer focus to his 20-plus years in the consumer packaged goods (CPG) industry. “CPG is all about the external customer. I have to have these skills as CIO because I am so involved with customers—from market research, new product innovation and throughout the supply chain,” says Chappelle. For CIOs in any industry who want to connect to the external customer, Chappelle suggests getting involved with new product or sales information initiatives. “Both require heavy IS support and will get any CIO linked externally,” Chappelle says.

The Management Vacuum

When it comes to People and Organizational Development, from the CEO on down, C-level executives are relatively poor performers. Rajinder “Raj” Gupta, adjunct professor and executive director of the CEO Perspective Program at Northwestern’s Kellogg School of Management, has interviewed more than a dozen CEOs from companies including Walgreen’s, AON and Northern Trust about the competencies data. “In general, I found that the premium for CEOs as they rise through the ranks is a deep understanding of the business and customers, not necessarily on how they manage their people. The CEOs I spoke with are definitely aware of the need to focus more of their attention on people development,” says Gupta.

There’s opportunity here if CIOs can rise to the challenge. Michael Pilkington, managing director of corporate

time thinking about ways to motivate and develop our people,” he says.

When Pilkington took over IT at Euroclear, he made it a priority to respond to the general corporate feeling that the IT department was insensitive to users. He believed his team needed to work on its awareness of its internal customers’ needs, and not just those in customer-facing positions. Each member of his non-customer-facing team went through a half-day customer-focus training session (customer-facing staff went for a full day) to drive home the importance of customer awareness. Pilkington also ran a number of sessions to educate business users about IT.

What Do CEOs Want?

According to Gupta, CEOs want strategic-minded CIOs. The biggest deficits CEOs see in the current crop of IT chiefs are the lack of a deep understanding of business opportunities and the inability to communicate strategically with high-level internal and external stakeholders. Market Knowledge, Commercial Orientation and Customer Focus plug in there. “In industries where business is closely entwined with technology, or where it can be used as a competitive advantage, that’s where CEOs are looking for CIOs with high EQ,” says Reynold Lewke, Egon Zehnder’s North American CIO practice leader.

This trend is personified by Kumad Kalia, CIO of Direct Energy, and his CEO, Deryk King. King specifically recruited Kalia for his EQ. “I took great care to recruit someone with a good track record of operational excellence, strategic thinking, experience in customer service and a diverse career background,” King told the audience at the spring CIO Leadership Conference. (For more on this session, go to advice.cio.com/meridith_levinson/the_cio_ceo_relationship_at_direct_energy.) “I expect a much broader contribution from my CIO; he has to be prepared to talk about issues outside of his immediate responsibility,” Kalia concurred: “The role of the CIO is more than just keeping things running,” he said. “We’ve had to acquire a lot of the skills of a traditional general manager.”

Direct Energy was ready for a strategic CIO with an expanded role, but many companies still have a traditional, constricted view of the CIO as operations-oriented function head. How can CIOs in these companies create awareness and acceptance of the strategic potential of their position? Find out in Forum in the Aug. 1 issue of *CIO*. **CIO**

Tools We Use

A simplified public version of the **SELF-ASSESSMENT TOOL** is available at www.cioexecutivecouncil.com/futurestatecio. You may also sign up there for a July 19 teleconference on the Future-State CIO concept.

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technology at Euroclear SA in Belgium, believes CIOs, like CEOs, have not focused enough on this area. “As executives, we are tasked with spending a lot of our time focusing on how to serve our clients; I think we should spend just as much

Carrie Mathews is a Senior Program Manager for the CIO Executive Council. To comment on this article go to letters@cio.com.



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Louie Ehrlich

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(Source: Wall Street Journal, February 20, 2007)

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BY SCOTT KIRSNER

THE HYPE

Web 1.0 vs. Web 2.0

Web 2.0 frenzy is producing startups like rabbits; it's persuaded the venture capitalists to open their wallets again, and it's even spawned its own hot-ticket conferences. But Web 2.0 is nothing like Web 1.0. Is it? Let's compare...



Web 1.0

Annoying, self-promotional CEOs drop out of college to pursue dreams of dotcom wealth.

A friend is someone who'll gladly help you out in a bind.

Approach to naming companies: Add a ".com" to everyday words (Furniture.com, Pets.com, ReupholsterFurnitureDestroyedbyYourPets.com).

KM software attempts (unsuccessfully) to get employees to share information and learning with one another.

Narcissistic execs track how many hits their latest memo gets on the corporate intranet.

Cross-platform miracle code that crashes browsers is called Java.

Wall Street analysts inflate insubstantial companies with hype and hot air.

Big Media's nemesis: MP3-sharing site Napster.

There is only one browser: Netscape.

Enhancing your reputation involves being nice to people, accomplishing things, contributing to charity.

Acronym the cognoscenti deploy to show they're in the know: DHTML.

Venture capitalists finance startups that hope to earn money from advertising.

Big scary company: Microsoft.

Marketing swag: free messenger bag.

Fire sale on Herman Miller Aeron chairs when companies go out of business.

Web 2.0

Same CEOs, now seven years older, drop out of Web 1.0 businesses.

A friend is someone who has spent at least 30 seconds on your MySpace page.

Approach to naming companies: Add an "er" suffix, ruthlessly extract vowels, or both (Revver, Twitter, Eurekster, Flickr, Zoomr, VwIRplcr).

Corporate wikis attempt (hilariously) to get employees to share information and learning with one another.

Narcissistic execs track how many downloads their podcasts get.

Cross-platform miracle code that crashes browsers is called Ajax.

A-list bloggers inflate insubstantial companies with hype and hot air.

Big Media's nemesis: Video-sharing site YouTube.

There are many browsers, but most sites are viewable in only one of them—inevitably, not the one you're using.

Enhancing your reputation involves editing your entry in Wikipedia.

Acronym the cognoscenti deploy to show they're in the know: RSS

Entrepreneurs spurn venture capital financing and hope to earn money from advertising.

Big scary company: Google.

Marketing swag: free software widget.

Mom and Dad get their guest bedroom back when companies go out of business.

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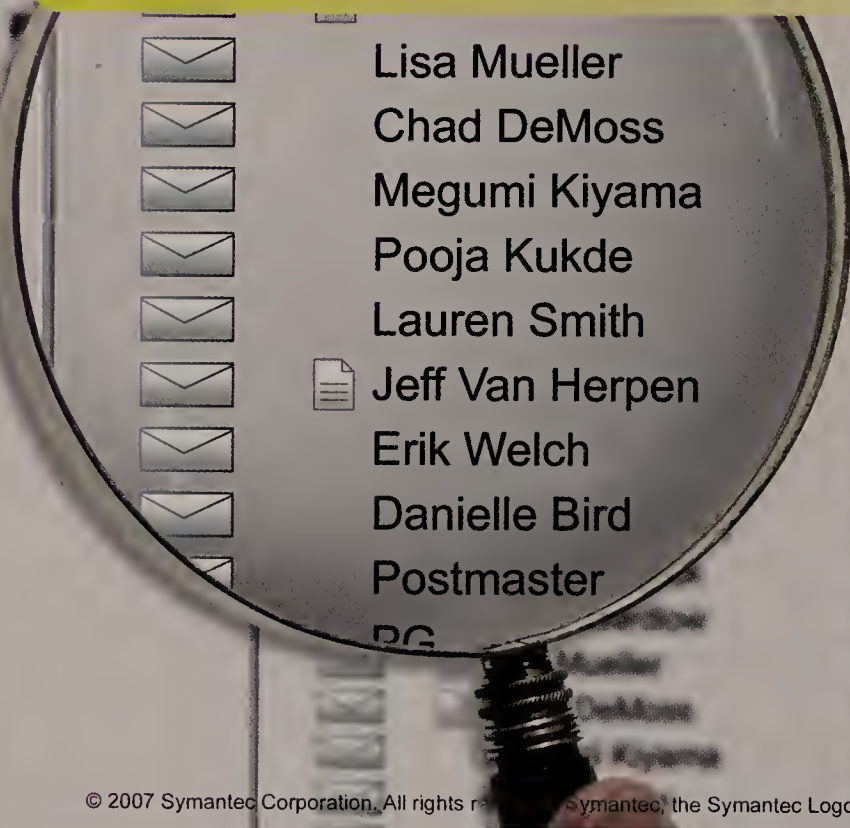
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